

SEQUENCE LISTING

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<120> METHODS FOR MODIFYING PLANT BIOMASS AND TOLERANCE TO ABIOTIC
STRESS

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<151> 2003-02-25

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<151> 2000-08-22

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<151> 2001-08-09

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<151> 2003-04-10

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Pro Pro Thr Ile Ile Thr Arg Asp Ser Pro Asn Val Leu Arg Ser His
      50              55              60

Val Leu Glu Val Thr Ser Gly Ser Asp Ile Ser Glu Ala Val Ser Thr
 65              70              75              80

Tyr Ala Thr Arg Arg Gly Cys Gly Val Cys Ile Ile Ser Gly Thr Gly
      85              90              95

Ala Val Thr Asn Val Thr Ile Arg Gln Pro Ala Ala Pro Ala Gly Gly
      100              105              110

Gly Val Ile Thr Leu His Gly Arg Phe Asp Ile Leu Ser Leu Thr Gly
      115              120              125

Thr Ala Leu Pro Pro Pro Ala Pro Pro Gly Ala Gly Gly Leu Thr Val
      130              135              140

Tyr Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Asn Val Ala Gly
 145              150              155              160

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Asn Leu Phe Arg Pro Glu Ile His His Gln Gln Leu Gln Pro Gln Gly
      20             25             30
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```
Gly Ile Asn Leu Ile Asp Gln His His His Gln His Gln Gln His Gln
      35             40             45
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Gln Gln Gln Gln Pro Ser Asp Asp Ser Arg Glu Ser Asp His Ser Asn
      50             55             60
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Lys Asp His His Gln Gln Gly Arg Pro Asp Ser Asp Pro Asn Thr Ser
      65             70             75             80
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Ser Ser Ala Pro Gly Lys Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys
      85             90             95
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Asn Lys Ala Lys Pro Pro Ile Ile Val Thr Arg Asp Ser Pro Asn Ala
      100            105            110
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Leu Arg Ser His Val Leu Glu Val Ser Pro Gly Ala Asp Ile Val Glu
      115            120            125
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Ser Val Ser Thr Tyr Ala Arg Arg Arg Gly Arg Gly Val Ser Val Leu
      130            135            140
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Gly Gly Asn Gly Thr Val Ser Asn Val Thr Leu Arg Gln Pro Val Thr
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Pro Gly Asn Gly Gly Gly Val Ser Gly Gly Gly Gly Val Val Thr Leu
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His Gly Arg Phe Glu Ile Leu Ser Leu Thr Gly Thr Val Leu Pro Pro
180 185 190

Pro Ala Pro Pro Gly Ala Gly Gly Leu Ser Ile Phe Leu Ala Gly Gly
195 200 205

Gln Gly Gln Val Val Gly Gly Ser Val Val Ala Pro Leu Ile Ala Ser
210 215 220

Ala Pro Val Ile Leu Met Ala Ala Ser Phe Ser Asn Ala Val Phe Glu
225 230 235 240

Arg Leu Pro Ile Glu Glu Glu Glu Glu Glu Gly Gly Gly Gly Gly Gly
245 250 255

Gly Gly Gly Gly Gly Pro Pro Gln Met Gln Gln Ala Pro Ser Ala Ser
260 265 270

Pro Pro Ser Gly Val Thr Gly Gln Gly Gln Leu Gly Gly Asn Val Gly
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 35 40 45

Gln Glu Val Asp Asn Asn Asn Asn Asp Asp Asp Arg Asp Asn Leu Ser
50 55 60

Gly Asp Asp His Glu Pro Arg Glu Gly Ala Val Glu Ala Pro Thr Arg
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Arg Pro Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Pro Pro
85 90 95

Ile Phe Val Thr Arg Asp Ser Pro Asn Ala Leu Lys Ser His Val Met
100 105 110

Glu Ile Ala Ser Gly Thr Asp Val Ile Glu Thr Leu Ala Thr Phe Ala
115 120 125

Arg Arg Arg Gln Arg Gly Ile Cys Ile Leu Ser Gly Asn Gly Thr Val
130 135 140

Ala Asn Val Thr Leu Arg Gln Pro Ser Thr Ala Ala Val Ala Ala Ala
145 150 155 160

Pro Gly Gly Ala Ala Val Leu Ala Leu Gln Gly Arg Phe Glu Ile Leu
165 170 175

Ser Leu Thr Gly Ser Phe Leu Pro Gly Pro Ala Pro Pro Gly Ser Thr
180 185 190

Gly Leu Thr Ile Tyr Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly
195 200 205

Ser Val Val Gly Pro Leu Met Ala Ala Gly Pro Val Met Leu Ile Ala
210 215 220

Ala Thr Phe Ser Asn Ala Thr Tyr Glu Arg Leu Pro Leu Glu Glu Glu
225 230 235 240

Glu Ala Ala Glu Arg Gly Gly Gly Gly Gly Ser Gly Gly Val Val Pro
245 250 255

Gly Gln Leu Gly Gly Gly Gly Ser Pro Leu Ser Ser Gly Ala Gly Gly
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Gly Asp Gly Asn Gln Gly Leu Pro Val Tyr Asn Met Pro Gly Asn Leu
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 35 40 45

Asn Ser Asp Asp Glu Ser Asp Ser Asn Lys Asp Pro Gly Ser Asp Pro
 50 55 60

Val Thr Ser Gly Ser Thr Gly Lys Arg Pro Arg Gly Arg Pro Pro Gly
 65 70 75 80

Ser Lys Asn Lys Pro Lys Pro Pro Val Ile Val Thr Arg Asp Ser Pro
 85 90 95

Asn Val Leu Arg Ser His Val Leu Glu Val Ser Ser Gly Ala Asp Ile
 100 105 110

Val Glu Ser Val Thr Thr Tyr Ala Arg Arg Arg Gly Arg Gly Val Ser
 115 120 125

Ile Leu Ser Gly Asn Gly Thr Val Ala Asn Val Ser Leu Arg Gln Pro
 130 135 140

Ala Thr Thr Ala Ala His Gly Ala Asn Gly Gly Thr Gly Gly Val Val
 145 150 155 160

Ala Leu His Gly Arg Phe Glu Ile Leu Ser Leu Thr Gly Thr Val Leu
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Pro Pro Pro Ala Pro Pro Gly Ser Gly Gly Leu Ser Ile Phe Leu Ser
 180 185 190

Gly Val Gln Gly Gln Val Ile Gly Gly Asn Val Val Ala Pro Leu Val
 195 200 205

Ala Ser Gly Pro Val Ile Leu Met Ala Ala Ser Phe Ser Asn Ala Thr
210 215 220

Phe Glu Arg Leu Pro Leu Glu Asp Glu Gly Gly Glu Gly Gly Glu Gly
225 230 235 240

Gly Glu Val Gly Glu Gly Gly Gly Gly Glu Gly Gly Pro Pro Pro Ala
245 250 255

Thr Ser Ser Ser Pro Pro Ser Gly Ala Gly Gln Gly Gln Leu Arg Gly
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 35 40 45
 Pro Asp Lys Ser Pro Val Gly Glu Gly Asp His Ala Gly Gly Ser Gly
 50 55 60
 Ser Gly Gly Val Gly Gly Asp His Gln Pro Ser Ser Ser Ala Met Val
 65 70 75 80
 Pro Val Glu Gly Gly Ser Gly Ser Ala Gly Gly Ser Gly Ser Gly Gly
 85 90 95
 Pro Thr Arg Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro
 100 105 110
 Lys Pro Pro Ile Ile Val Thr Arg Asp Ser Pro Asn Ala Leu His Ser
 115 120 125
 His Val Leu Glu Val Ala Gly Gly Ala Asp Val Val Asp Cys Val Ala
 130 135 140
 Glu Tyr Ala Arg Arg Arg Gly Arg Gly Val Cys Val Leu Ser Gly Gly
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 Gly Ala Val Val Asn Val Ala Leu Arg Gln Pro Gly Ala Ser Pro Pro
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Gly Ser Met Val Ala Thr Leu Arg Gly Arg Phe Glu Ile Leu Ser Leu
180 185 190

Thr Gly Thr Val Leu Pro Pro Pro Ala Pro Pro Gly Ala Ser Gly Leu
195 200 205

Thr Val Phe Leu Ser Gly Gly Gln Gly Gln Val Ile Gly Gly Ser Val
210 215 220

Val Gly Pro Leu Val Ala Ala Gly Pro Val Val Leu Met Ala Ala Ser
225 230 235 240

Phe Ala Asn Ala Val Tyr Glu Arg Leu Pro Leu Glu Gly Glu Glu Glu
245 250 255

Glu Val Ala Ala Pro Ala Ala Gly Gly Glu Ala Gln Asp Gln Val Ala
260 265 270

Gln Ser Ala Gly Pro Pro Gly Gln Gln Pro Ala Ala Ser Gln Ser Ser
275 280 285

Gly Val Thr Gly Gly Asp Gly Thr Gly Gly Ala Gly Gly Met Ser Leu
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Met Ala Gly Leu Asp Leu Gly Thr Ser Tyr Leu His His His Gln Ser
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Leu His Leu Arg His Asp Asp Gly Gly Ala Gly Ser Asp Asp Gly Gly
          20           25           30

```

```

His Asp Asp Leu Ser Pro Gly Ser Gly Gly Gly Gly Gly Pro Ser Ser
          35           40           45

```

```

Thr Ala Gly Gly Ala Gly Ile Gly Gly Gly Glu Val Val Ala Arg Arg
          50           55           60

```

```

Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Val
          65           70           75           80

```

```

Ile Ile Thr Arg Glu Ser Ala Asn Ala Leu Arg Ala His Ile Leu Glu
          85           90           95

```

```

Val Ala Ala Gly Cys Asp Val Phe Glu Ala Leu Thr Ala Tyr Ala Arg
          100          105          110

```

```

Arg Arg Gln Arg Gly Val Cys Val Leu Ser Ala Ala Gly Thr Val Ala
          115          120          125

```

```

Asn Val Thr Leu Arg Gln Pro Gln Ser Ala Gln Pro Gly Pro Ala Ser
          130          135          140

```

Pro Ala Val Ala Thr Leu His Gly Arg Phe Glu Ile Leu Ser Leu Ala
145 150 155 160

Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Gly Ala Thr Ser Leu Ala
165 170 175

Ala Phe Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Ser Val Ala
180 185 190

Gly Ala Leu Ile Ala Ala Gly Pro Val Val Val Val Ala Ala Ser Phe
195 200 205

Ser Asn Val Ala Tyr Glu Arg Leu Pro Leu Glu Asp Gly Asp Glu Val
210 215 220

Val Pro Pro Ala Pro Ala Gly Ser Asp Gln Gly Gly Gly Gly Ser Gly
225 230 235 240

Gly Met Pro Pro Leu Gly Val Asp Pro Ser Gly Gly Ala Ala Thr Gly
245 250 255

Gly Leu Pro Phe Phe Asn Met Pro Phe Gly Met Pro Pro Met Pro Val
260 265 270

Asp Gly His Ala Gly Trp Pro Gly Ala Gly Val Gly Arg Pro Pro Phe
275 280 285

Ser

<210> 13
<211> 1344
<212> DNA
<213> Glycine max

<220>
<223> G3456

<400> 13
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gagaactctg gccactcgat gaaaaaaccg gatctggggt tttccatgaa cgagagtacg 180
gtgacgggga accatatagg agaagaagat gaggacagag aaaacagcga cgagccaaga 240
gagggagcta ttgacgtcgc caccacgcgc cgccctaggg gacgtccacc gggctccaga 300
aacaagccga aaccgccgat attcgtcacc cgagacagcc ctaacgcgct gcggagccac 360

MBI0034CIP.ST25.txt

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gatgatgatc aggaacaaca cggcgcgcca ggcggaggag gttcgccgca ggaaaaaac 780
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tctcctcatg ccagacctcc tttctaatta ttgaacgtgc tacatggcaa caattaatat 960
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<210> 14
 <211> 280
 <212> PRT
 <213> Glycine max

<220>
 <223> G3456 polypeptide

<400> 14

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Met Ala Asn Arg Trp Trp Thr Gly Ser Val Gly Leu Glu Asn Ser Gly
1           5           10           15

```

```

His Ser Met Lys Lys Pro Asp Leu Gly Phe Ser Met Asn Glu Ser Thr
          20           25           30

```

```

Val Thr Gly Asn His Ile Gly Glu Glu Asp Glu Asp Arg Glu Asn Ser
      35           40           45

```

```

Asp Glu Pro Arg Glu Gly Ala Ile Asp Val Ala Thr Thr Arg Arg Pro
  50           55           60

```


MBI0034CIP.ST25.txt

Arg Gly Arg Pro Pro Gly Ser Arg Asn Lys Pro Lys Pro Pro Ile Phe
65 70 75 80

Val Thr Arg Asp Ser Pro Asn Ala Leu Arg Ser His Val Met Glu Ile
85 90 95

Ala Val Gly Ala Asp Ile Ala Asp Cys Val Ala Gln Phe Ala Arg Arg
100 105 110

Arg Gln Arg Gly Val Ser Ile Leu Ser Gly Ser Gly Thr Val Val Asn
115 120 125

Val Asn Leu Arg Gln Pro Thr Ala Pro Gly Ala Val Met Ala Leu His
130 135 140

Gly Arg Phe Asp Ile Leu Ser Leu Thr Gly Ser Phe Leu Pro Gly Pro
145 150 155 160

Ser Pro Pro Gly Ala Thr Gly Leu Thr Ile Tyr Leu Ala Gly Gly Gln
165 170 175

Gly Gln Ile Val Gly Gly Glu Val Val Gly Pro Leu Val Ala Ala Gly
180 185 190

Pro Val Leu Val Met Ala Ala Thr Phe Ser Asn Ala Thr Tyr Glu Arg
195 200 205

Leu Pro Leu Glu Asp Asp Asp Gln Glu Gln His Gly Gly Gly Gly Gly
210 215 220

Gly Gly Ser Pro Gln Glu Lys Asn Gly Gly Pro Gly Glu Ala Ser Ser
225 230 235 240

Ser Ile Ser Val Tyr Asn Asn Asn Val Pro Pro Ser Leu Gly Leu Pro
245 250 255

Asn Gly Gln His Leu Asn His Glu Ala Tyr Ser Ser Pro Trp Gly His
260 265 270

Ser Pro His Ala Arg Pro Pro Phe
275 280

<210> 15
<211> 1596
<212> DNA
<213> Glycine max

<220>

<223> G3459

<400> 15

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cttttctttc	tctgcactcc	atctttcttt	ccaaaaccca	cccttttcta	ttcctcttcc	180
tcttctctct	tttcccttct	ttttatttcc	ttacactcac	aacatttccc	ttaaaataaa	240
cataaacaaa	ccagcactgt	tcttgacccc	caaaaaaaaa	aaatctctac	tatttattaa	300
ctatattaat	tcctccataa	tataatcatt	tgttttcctt	gttttctgtt	ttctcttata	360
atatataacc	ttctttttatc	tattttttct	gttttgacc	ttgtgattgt	gagttatata	420
tatttatatt	tatatatcat	tctctctctt	ttttttggat	gtgtctatgg	ctggtttggg	480
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gacgtcgtct	caaggaaaca	acaacaacaa	taaccctttc	cccgaacctt	cttcaggact	1260
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tgtaaaccct	gcttcacgtc	cacaaccttt	ttgagagttc	atgaagatgt	tgacggagga	1380
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aacatatata	taaactatat	gttttttctt	cttcttcatg	ttattttgtt	tttttcttat	1500
gttggttaatg	gatataatat	gacatgataa	ttattatgta	gtctgatttt	catctccttg	1560
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<210> 16

<211> 295

<212> PRT

<213> Glycine max

<220>

<223> G3459 polypeptide

<400> 16

Met Ala Gly Leu Asp Leu Gly Ser Ala Ser Arg Phe Val Gln Asn Leu
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His Arg Pro Asp Leu His Leu Gln Gln Asn Phe Gln Gln His Gln Asp
20 25 30

Gln Gln His Gln Arg Asp Leu Glu Glu Gln Lys Thr Pro Pro Asn His
35 40 45

Arg Met Gly Ala Pro Phe Asp Asp Asp Ser Asp Asp Arg Ser Pro Gly
50 55 60

Leu Glu Leu Thr Ser Gly Pro Gly Asp Ile Val Gly Arg Arg Pro Arg
65 70 75 80

Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Val Ile Ile
85 90 95

Thr Arg Glu Ser Ala Asn Thr Leu Arg Ala His Ile Leu Glu Val Gly
100 105 110

Ser Gly Ser Asp Val Phe Asp Cys Val Thr Ala Tyr Ala Arg Arg Arg
115 120 125

Gln Arg Gly Ile Cys Val Leu Ser Gly Ser Gly Thr Val Thr Asn Val
130 135 140

Ser Leu Arg Gln Pro Ala Ala Ala Gly Ala Val Val Thr Leu His Gly
145 150 155 160

Arg Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala
165 170 175

Pro Pro Gly Ala Thr Ser Leu Thr Ile Tyr Leu Ala Gly Gly Gln Gly
180 185 190

Gln Val Val Gly Gly Asn Val Ile Gly Glu Leu Thr Ala Ala Gly Pro
195 200 205

Val Ile Val Ile Ala Ala Ser Phe Thr Asn Val Ala Tyr Glu Arg Leu
210 215 220

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Pro Leu Glu Glu Asp Glu Gln Gln Gln Gln Gln Gln Gln Leu Gln Ile
225 230 235 240

Gln Pro Pro Ala Thr Thr Ser Ser Gln Gly Asn Asn Asn Asn Asn Asn
245 250 255

Pro Phe Pro Asp Pro Ser Ser Gly Leu Pro Phe Phe Asn Leu Pro Leu
260 265 270

Asn Met Gln Asn Val Gln Leu Pro Val Glu Gly Trp Ala Val Asn Pro
275 280 285

Ala Ser Arg Pro Gln Pro Phe
290 295

<210> 17
<211> 1443
<212> DNA
<213> Glycine max

<220>
<223> G3460

<400> 17
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aaaaaattat ctactattta ttaactatat ttctccatat tataatcatt tgtattcctt 180
gttttctatg cttctcttat aatatataac ctctgtttta tttatttttt ttgttttgca 240
ccttgtggat tgtgagctat atctatttat atatatcatt ctctttcttt ttttttggat 300
gtttctatgg ctggtttgga tttaggaagc gcgtcacgct ttgttcagaa tcttcactta 360
ccggacttgc acttgcaaca aaattaccag caaccccggc acaagcgcga ttcggaggag 420
caagagactc ctccgaacct gggaacagcg ctggcgccgt tcgacaacga tgatgacaaa 480
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tatgatagga catgattatt attattatgt agcgagtttc agtctgactc tcatgtcttt 1380
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att 1443
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<210> 18
 <211> 276
 <212> PRT
 <213> Glycine max

<220>
 <223> G3460 polypeptide

<400> 18

Met Ala Gly Leu Asp Leu Gly Ser Ala Ser Arg Phe Val Gln Asn Leu
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His Leu Pro Asp Leu His Leu Gln Gln Asn Tyr Gln Gln Pro Arg His
 20 25 30

Lys Arg Asp Ser Glu Glu Gln Glu Thr Pro Pro Asn Pro Gly Thr Ala
 35 40 45

Leu Ala Pro Phe Asp Asn Asp Asp Asp Lys Ser Gln Gly Leu Glu Leu
 50 55 60

Ala Ser Gly Pro Gly Asp Ile Val Gly Arg Arg Pro Arg Gly Arg Pro
 65 70 75 80

Ser Gly Ser Lys Asn Lys Pro Lys Pro Pro Val Ile Ile Thr Arg Glu
 85 90 95

Ser Ala Asn Thr Leu Arg Ala His Ile Leu Glu Val Gly Ser Gly Ser
 100 105 110

Asp Val Phe Asp Cys Val Thr Ala Tyr Ala Arg Arg Arg Gln Arg Gly
 115 120 125

Ile Cys Val Leu Ser Gly Ser Gly Thr Val Thr Asn Val Ser Leu Arg
 130 135 140

Gln Pro Ala Ala Ala Gly Ala Val Val Arg Leu His Gly Arg Phe Glu
145 150 155 160

Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Gly
165 170 175

Ala Thr Ser Leu Thr Ile Tyr Leu Ala Gly Gly Gln Gly Gln Val Val
180 185 190

Gly Gly Asn Val Val Gly Glu Leu Thr Ala Ala Gly Pro Val Ile Val
195 200 205

Ile Ala Ala Ser Phe Thr Asn Val Ala Tyr Glu Arg Leu Pro Leu Glu
210 215 220

Glu Asp Glu Gln Gln His Gln Gln Leu Gln Ile Gln Ser Pro Ala Ala
225 230 235 240

Thr Ser Ser Gln Gly Asn Asn Asn Asn Asn Pro Phe Pro Asp Pro Ser
245 250 255

Ser Gly Leu Pro Phe Phe Asn Leu Pro Leu Asn Met Gln Asn Val Gln
260 265 270

Leu Pro Pro Phe
275

<210> 19
<211> 1005
<212> DNA
<213> Oryza sativa

<220>
<223> G3408

<400> 19
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gccgacgatc tggccgtgcg ggccggcgag cgagatggag agggccgcgg cggcgaccgc 420
ggcctggggc gccacggagg acatggccgg aggcaggaac gtggccgaca gggagaggat 480

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ctcgtaccgg ccgtggaaca cgatcgcagc cggagctgag cccgggaccc cgggtgacgg      540
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ccgacgggctc gagaaccgcg cgagcgcctc cgcgacgtcc cgcccgccgg ggatctcgat      660
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<210> 20
 <211> 334
 <212> PRT
 <213> Oryza sativa

<220>
 <223> G3408 polypeptide

<400> 20

Met Ser Phe Cys Glu Arg Asp Met Asn Lys Glu Ser Met Tyr Gln Glu
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Arg Asp Asp Met Ala Gly Ile Arg Phe Ala Thr Pro Pro Leu Pro Gln
 20 25 30

Gln Gln Gln Gln Gln Gln Leu Val Glu Cys Phe Ser Asp Glu Val Asp
 35 40 45

Ser Arg Gly Ser Gly Gly Glu Met Lys Asp Ala Val Gly Ser Gly Ser
 50 55 60

Gly Gln Leu Val Val Val Gly Gly Gly Asp Gly Ala Ser Ile Glu Val
 65 70 75 80

Ala Lys Lys Arg Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys
 85 90 95

Pro Pro Val Val Ile Thr Arg Glu Ala Glu Pro Ala Ala Ala Met Arg
 100 105 110

Pro His Val Ile Glu Ile Pro Gly Gly Arg Asp Val Ala Glu Ala Leu
 115 120 125

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Ala Arg Phe Ser Ser Arg Arg Asn Leu Gly Ile Cys Val Leu Ala Gly
130 135 140

Thr Gly Ala Val Ala Asn Val Ser Leu Arg His Pro Ser Pro Gly Val
145 150 155 160

Pro Gly Ser Ala Pro Ala Ala Ile Val Phe His Gly Arg Tyr Glu Ile
165 170 175

Leu Ser Leu Ser Ala Thr Phe Leu Pro Pro Ala Met Ser Ser Val Ala
180 185 190

Pro Gln Ala Ala Val Ala Ala Ala Gly Leu Ser Ile Ser Leu Ala Gly
195 200 205

Pro His Gly Gln Ile Val Gly Gly Ala Val Ala Gly Pro Leu Tyr Ala
210 215 220

Ala Thr Thr Val Val Val Val Ala Ala Ala Phe Thr Asn Pro Thr Phe
225 230 235 240

His Arg Leu Pro Ala Asp Asp Asp Ala Ser Val Ser Val Ser Val Ser
245 250 255

Leu Ser Gly Ser Gly Asp Ala Asp Glu His Arg Gly His Gln His Lys
260 265 270

Pro Glu Pro Gln Glu Pro Arg Gln Leu Arg Arg Pro Pro Pro His Leu
275 280 285

Ser Ala Ala Ala Ala Val Ser Ala Ala Gln Pro Val Glu Pro Cys Gly
290 295 300

Ala Pro Met Tyr Ala Cys His Pro Gln Pro Gln Glu Val Met Trp Pro
305 310 315 320

Pro Pro Ala Arg Thr Pro His Pro Pro Pro Pro Pro Pro Tyr
325 330

<210> 21
<211> 801
<212> DNA
<213> Oryza sativa

<220>
<223> G3403

<400> 21
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60

MBI0034CIP.ST25.txt

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acctacgagc gcctgccatt ggaggaagaa gaggagggct caggcccgcc catgcccggc 660
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<210> 22
<211> 266
<212> PRT
<213> Oryza sativa

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<220>
<223> G3403 polypeptide

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<400> 22

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Met Gly Leu Pro Glu Gln Pro Ser Gly Ser Ser Gly Pro Lys Ala Glu
1          5          10          15

```

```

Leu Pro Val Ala Lys Glu Pro Glu Ala Ser Pro Thr Gly Gly Ala Ala
20          25          30

```

```

Ala Asp His Ala Asp Glu Asn Asn Glu Ser Gly Gly Gly Glu Pro Arg
35          40          45

```

```

Glu Gly Ala Val Val Ala Ala Pro Asn Arg Arg Pro Arg Gly Arg Pro
50          55          60

```

```

Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Ile Phe Val Thr Arg Asp
65          70          75          80

```

```

Ser Pro Asn Ala Leu Arg Ser His Val Met Glu Val Ala Gly Gly Ala
85          90          95

```

MBI0034CIP.ST25.txt

Asp Val Ala Asp Ala Ile Ala Gln Phe Ser Arg Arg Arg Gln Arg Gly
100 105 110

Val Cys Val Leu Ser Gly Ala Gly Thr Val Ala Asn Val Ala Leu Arg
115 120 125

Gln Pro Ser Ala Pro Gly Ala Val Val Ala Leu His Gly Arg Phe Glu
130 135 140

Ile Leu Ser Leu Thr Gly Thr Phe Leu Pro Gly Pro Ala Pro Pro Gly
145 150 155 160

Ser Thr Gly Leu Thr Val Tyr Leu Ala Gly Gly Gln Gly Gln Val Val
165 170 175

Gly Gly Ser Val Val Gly Ser Leu Ile Ala Ala Gly Pro Val Met Val
180 185 190

Ile Ala Ser Thr Phe Ala Asn Ala Thr Tyr Glu Arg Leu Pro Leu Glu
195 200 205

Glu Glu Glu Glu Gly Ser Gly Pro Pro Met Pro Gly Gly Ala Glu Pro
210 215 220

Leu Met Ala Gly Gly His Gly Ile Ala Asp Pro Ser Ala Leu Pro Met
225 230 235 240

Phe Asn Leu Pro Pro Ser Asn Gly Leu Gly Gly Gly Gly Asp Gly Phe
245 250 255

Pro Trp Ala Ala His Pro Arg Pro Pro Tyr
260 265

<210> 23
<211> 1153
<212> DNA
<213> Glycine max

<220>
<223> G3458

<400> 23
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gtttttctat tcgttctgag agctttgtgt gtatggccgg catagacttg gggttcagcat 180
cacattttgt tcatcatcgc cttgaacgcc ctgaccttga agacgatgag aaccaacaag 240
accaagacaa caaccttaac aatcacgaag ggcttgacct agttacacca aattcaggtc 300

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ctggtgatgt tgttggcgc aggccaagag gaagacctcc aggttcaaag aacaagccaa 360
aaccaccagt tatcatcaca agagagagtg caaacaccct taggggtcac atccttgaag 420
ttagtagtgg ttgtgacgtc tttgaatcgg tcgctaccta tgcaaggaag cgacaaagag 480
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cggctggtgc cgtcgtcacg ctgcacggaa ggtttgagat cctctctttg tcaggatcat 600
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aacgttttct ctt 1153

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<210> 24
 <211> 270
 <212> PRT
 <213> Glycine max

<220>
 <223> G3458 polypeptide

<400> 24

Met Ala Gly Ile Asp Leu Gly Ser Ala Ser His Phe Val His His Arg
 1 5 10 15

Leu Glu Arg Pro Asp Leu Glu Asp Asp Glu Asn Gln Gln Asp Gln Asp
 20 25 30

Asn Asn Leu Asn Asn His Glu Gly Leu Asp Leu Val Thr Pro Asn Ser
 35 40 45

Gly Pro Gly Asp Val Val Gly Arg Arg Pro Arg Gly Arg Pro Pro Gly
 50 55 60

Ser Lys Asn Lys Pro Lys Pro Pro Val Ile Ile Thr Arg Glu Ser Ala
 65 70 75 80

MBI0034CIP.ST25.txt

Asn Thr Leu Arg Ala His Ile Leu Glu Val Ser Ser Gly Cys Asp Val
85 90 95

Phe Glu Ser Val Ala Thr Tyr Ala Arg Lys Arg Gln Arg Gly Ile Cys
100 105 110

Val Leu Ser Gly Ser Gly Thr Val Thr Asn Val Thr Leu Arg Gln Pro
115 120 125

Ala Ala Ala Gly Ala Val Val Thr Leu His Gly Arg Phe Glu Ile Leu
130 135 140

Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Gly Ala Thr
145 150 155 160

Ser Leu Thr Val Phe Leu Gly Gly Gly Gln Gly Gln Val Val Gly Gly
165 170 175

Asn Val Val Gly Pro Leu Val Ala Ser Gly Pro Val Ile Val Ile Ala
180 185 190

Ser Ser Phe Thr Asn Val Ala Tyr Glu Arg Leu Pro Leu Asp Glu Asp
195 200 205

Glu Ser Met Gln Met Gln Gln Gly Gln Ser Ser Ala Gly Asp Gly Ser
210 215 220

Gly Asp His Gly Gly Gly Val Ser Asn Asn Ser Phe Pro Asp Pro Ser
225 230 235 240

Ser Gly Leu Pro Phe Phe Asn Leu Pro Leu Asn Met Pro Gln Leu Pro
245 250 255

Val Asp Gly Trp Ala Gly Asn Ser Gly Gly Arg Gln Ser Tyr
260 265 270

<210> 25
<211> 918
<212> DNA
<213> Oryza sativa

<220>
<223> G3406

<400> 25
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caccgccgacc tccagctgca gcacagctac gccaaagcagc acgagccgctc cgacgacgac 120
cccaacggca gcggcgggcg cggcaacagc aacggcgggc cgtacgggga ccatgacggc 180

```

gggtcctcgt cgtcagggtcc tgccaccgac ggcgcggtcg gcggggcccg cgacgtggtg 240
gcgcgccggc cgcgggggcg cccgcctggc tccaagaaca agccgaagcc gccggtgatc 300
atcacgcggg agagcgccaa cacgtcgcgc gccacatcc tggaggtcgg gagcggctgc 360
gacgtgttcg agtgctctc cacgtacgcg cgccggcggc agcgcggcgt gtgctgctg 420
agcggcagcg gcgtgggtcac caacgtgacg ctgcgtcagc cgtcggcgcc cgcgggcgcc 480
gtcgtgtcgc tgcacgggag gttcgagatc ctgtcgtctt cgggctcctt cctcccgcg 540
ccggctcccc ccggcgccac cagcctcacc atcttcctcg ccgggggcca gggacaggtc 600
gtcggcgcca acgtcgtcgg cgcgtcttac gccgcgggcc cggtcatcgt catcgcggcg 660
tccttcgcca acgtcgcta cgagcgctc ccaactggagg aggaggaggc gccgccgccg 720
caggccggcc tgcagatgca gcagcccggc ggcggcgccg atgctggtgg catgggtggc 780
gcgttcccg cggaccgctc tgccgcggc ctcccgttct tcaacctgcc gctcaacaac 840
atgcccggtg gcggcggtc acagctccct cccggcgccg acggccatgg ctgggccggc 900
gcacggccac cgttctga 918

```

```

<210> 26
<211> 305
<212> PRT
<213> Oryza sativa

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```

<220>
<223> G3406 polypeptide

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```

<400> 26

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Met Ala Gly Leu Asp Leu Gly Thr Ala Ala Thr Arg Tyr Val His Gln
1          5          10         15

```

```

Leu His His Leu His Pro Asp Leu Gln Leu Gln His Ser Tyr Ala Lys
20          25          30

```

```

Gln His Glu Pro Ser Asp Asp Asp Pro Asn Gly Ser Gly Gly Gly Gly
35          40          45

```

```

Asn Ser Asn Gly Gly Pro Tyr Gly Asp His Asp Gly Gly Ser Ser Ser
50          55          60

```

```

Ser Gly Pro Ala Thr Asp Gly Ala Val Gly Gly Pro Gly Asp Val Val
65          70          75          80

```

```

Ala Arg Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys
85          90          95

```

MBI0034CIP.ST25.txt

Pro Pro Val Ile Ile Thr Arg Glu Ser Ala Asn Thr Leu Arg Ala His
100 105 110

Ile Leu Glu Val Gly Ser Gly Cys Asp Val Phe Glu Cys Val Ser Thr
115 120 125

Tyr Ala Arg Arg Arg Gln Arg Gly Val Cys Val Leu Ser Gly Ser Gly
130 135 140

Val Val Thr Asn Val Thr Leu Arg Gln Pro Ser Ala Pro Ala Gly Ala
145 150 155 160

Val Val Ser Leu His Gly Arg Phe Glu Ile Leu Ser Leu Ser Gly Ser
165 170 175

Phe Leu Pro Pro Pro Ala Pro Pro Gly Ala Thr Ser Leu Thr Ile Phe
180 185 190

Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Asn Val Val Gly Ala
195 200 205

Leu Tyr Ala Ala Gly Pro Val Ile Val, Ile Ala Ala Ser Phe Ala Asn
210 215 220

Val Ala Tyr Glu Arg Leu Pro Leu Glu Glu Glu Glu Ala Pro Pro Pro
225 230 235 240

Gln Ala Gly Leu Gln Met Gln Gln Pro Gly Gly Gly Ala Asp Ala Gly
245 250 255

Gly Met Gly Gly Ala Phe Pro Pro Asp Pro Ser Ala Ala Gly Leu Pro
260 265 270

Phe Phe Asn Leu Pro Leu Asn Asn Met Pro Gly Gly Gly Gly Ser Gln
275 280 285

Leu Pro Pro Gly Ala Asp Gly His Gly Trp Ala Gly Ala Arg Pro Pro
290 295 300

Phe
305

<210> 27
<211> 951
<212> DNA
<213> Oryza sativa

<220>

<223> G3405

<400> 27

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tcagaacggc gccgggcggc caccgccggc tccagggttc catccgtagg cggcttccgg      60
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ggccccgccg gcgagctgcg ccgcttgctg cccgcggcg agcaaccag cgctgtcggc      180
ttgcccttga gccgccagta gctcgtcgtc ctccaacggc agccgctcgt acaccgcgtt      240
cgcaaaagac gccgccatta tcaccacagg cccagccgcg gtcagcgcg cgacgacgct      300
gccgcccacg acctggccct ggccctccggc caggtagacg gtgagccccg tggcctccgg      360
cggggcgggc ggcgggagga aggagccgga gagggagagt atctcgaacc ggccgtggag      420
cgcaacgacc gtcctctgcg atgcgggctg ccgcagcgtg acgttagtga cggtgccggc      480
gccgctgagc acgcaaacc cgcgctgccg gcgtcgcgcg aacgtggtga tgctctcgga      540
gatgtcgcag ccgccggcca cctccatgac gtgcgtccgg agcgtgttgg cgctgtccct      600
ggtgatgatg atcgggtggct tcggcttggt cttggacccc gccgggcgtc ccctcgggcg      660
gcgcgtggcg ctctcgctcc cggcgccgtc cggcccgcca cccgaggggg gtaccagcgc      720
gaggtcaccg ccgtcaccac cgcttccatg gccgttgcca ctgttctcgt cgtcgtcgtg      780
gtcgcgcttg gtgccgcggc tgccgaagac acccggagtg ccgccgcctt ggtcatcctc      840
ggtcttgaga tgcagctggt gctgctgctg ctggagatgg tgatggaagt cgcgggtggt      900
gaacgggtgga ggaagatggt gaccgtgtat tgatgccgtg accggatcca t          951

```

<210> 28

<211> 316

<212> PRT

<213> Oryza sativa

<220>

<223> G3405 polypeptide

<400> 28

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Met Asp Pro Val Thr Ala Ser Ile His Gly His His Leu Pro Pro Pro
1           5           10           15

Phe Asn Thr Arg Asp Phe His His His Leu Gln Gln Gln Gln His Gln
                20           25           30

Leu His Leu Lys Thr Glu Asp Asp Gln Gly Gly Gly Thr Pro Gly Val
        35           40           45

Phe Gly Ser Arg Gly Thr Lys Arg Asp His Asp Asp Asp Glu Asn Ser
50           55           60

```

MBI0034CIP.ST25.txt

Gly Asn Gly His Gly Ser Gly Gly Asp Gly Gly Asp Leu Ala Leu Val
65 70 75 80

Pro Pro Ser Gly Gly Gly Pro Asp Gly Ala Gly Ser Glu Ser Ala Thr
85 90 95

Arg Arg Pro Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Pro
100 105 110

Pro Ile Ile Ile Thr Arg Asp Ser Ala Asn Thr Leu Arg Thr His Val
115 120 125

Met Glu Val Ala Gly Gly Cys Asp Ile Ser Glu Ser Ile Thr Thr Phe
130 135 140

Ala Arg Arg Arg Gln Arg Gly Val Cys Val Leu Ser Gly Ala Gly Thr
145 150 155 160

Val Thr Asn Val Thr Leu Arg Gln Pro Ala Ser Gln Gly Ala Val Val
165 170 175

Ala Leu His Gly Arg Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu
180 185 190

Pro Pro Pro Ala Pro Pro Glu Ala Thr Gly Leu Thr Val Tyr Leu Ala
195 200 205

Gly Gly Gln Gly Gln Val Val Gly Gly Ser Val Val Gly Ala Leu Thr
210 215 220

Ala Ala Gly Pro Val Val Ile Met Ala Ala Ser Phe Ala Asn Ala Val
225 230 235 240

Tyr Glu Arg Leu Pro Leu Glu Asp Asp Glu Leu Leu Ala Ala Gln Gly
245 250 255

Gln Ala Asp Ser Ala Gly Leu Leu Ala Ala Gly Gln Gln Ala Ala Gln
260 265 270

Leu Ala Gly Gly Ala Val Asp Pro Ser Leu Phe Gln Gly Leu Pro Pro
275 280 285

Asn Leu Leu Gly Asn Val Gln Leu Pro Pro Glu Ala Ala Tyr Gly Trp
290 295 300

Asn Pro Gly Ala Gly Gly Gly Arg Pro Ala Pro Phe
305 310 315

<210> 29
 <211> 969
 <212> DNA
 <213> Oryza sativa

<220>
 <223> G3400

<400> 29
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 aagttgctgc tgctgctgct ggtaggatcc cacatggcct ccaagataca tgccgagacc 120
 gccgccgccg ccgccgtcac cggcggtcac ctcagaggac tgcgaggctg tgggctgctg 180
 ctgcggtggt ggtgggcccgg ttggtgcgc cgcacgcccg ggaggggtgg cggcggcagc 240
 ctctgectcc ggatcctccc catcgagtgg cagacgctcg tagacggcat tggcgaacga 300
 ggcggccatg aggaagactg gccccgcggc gatgagctgg ccggccacgc tcccgcgcac 360
 cacctggccc tgcccgcggg agaggaagac ggtgaggccg ctggcgctgg gggcgcgggg 420
 cggcgggagg acggtgcccg tgagggacag gatctcgaac tggccgcgca tgggtggcgac 480
 caggctgccc gggggcgacg cgctggctg gcggagcgcg acgttggcga cggcgccgcc 540
 accgctgagc acggagacgc cgcggccgcg gcggcgcgcg aactcgcaga cgcactcgac 600
 gatgtcgggt cccgcggcga cctcgaggac gtgggagtgg aacgcgttgg ggctgtcccg 660
 cgtcacgatg atggggcggt tgggcttggt cttggagccc agcggcctcc cgcgggggcg 720
 ccgcatcggg ccacccgaac cgctgccgce gccgctgtcc tccgccgcca ccatggccga 780
 cgacgtcggg tggccgatc ctaggtcggc gtccgcgccc gggctctcat ccggcgacag 840
 catggaccgc tccgccttga cgtcacctgc cggggacagt ggctggtgct gctgcgcgcg 900
 gagcatgtgt aggtagtgcg ccgccacgcc gccgccgcca ccgccgccgg tgggatccat 960
 cccggccat 969

<210> 30
 <211> 322
 <212> PRT
 <213> Oryza sativa

<220>
 <223> G3400 polypeptide

<400> 30

Met Ala Gly Met Asp Pro Thr Gly Gly Gly Gly Gly Gly Val Ala
 1 5 10 15

Ala His Tyr Leu His Met Leu Arg Ala Gln Gln His Gln Pro Leu Ser
 20 25 30

Pro Ala Gly Asp Val Lys Ala Glu Arg Ser Met Leu Ser Pro Asp Glu
35 40 45

Ser Pro Gly Ala Asp Ala Asp Leu Gly Ser Asp His Pro Thr Ser Ser
50 55 60

Ala Met Val Ala Ala Glu Asp Ser Gly Gly Gly Ser Gly Ser Gly Gly
65 70 75 80

Pro Met Arg Arg Pro Arg Gly Arg Pro Leu Gly Ser Lys Asn Lys Pro
85 90 95

Lys Pro Pro Ile¹ Ile Val Thr Arg Asp Ser Pro Asn Ala Phe His Ser
100 105 110

His Val Leu Glu Val Ala Ala Gly Thr Asp Ile Val Glu Cys Val Cys
115 120 125

Glu Phe Ala Arg Arg Arg Gly Arg Gly Val Ser Val Leu Ser Gly Gly
130 135 140

Gly Ala Val Ala Asn Val Ala Leu Arg Gln Pro Gly Ala Ser Pro Pro
145 150 155 160

Gly Ser Leu Val Ala Thr Met Arg Gly Gln Phe Glu Ile Leu Ser Leu
165 170 175

Thr Gly Thr Val Leu Pro Pro Pro Ala Pro Pro Ser Ala Ser Gly Leu
180 185 190

Thr Val Phe Leu Ser Gly Gly Gln Gly Gln Val Val Gly Gly Ser Val
195 200 205

Ala Gly Gln Leu Ile Ala Ala Gly Pro Val Phe Leu Met Ala Ala Ser
210 215 220

Phe Ala Asn Ala Val Tyr Glu Arg Leu Pro Leu Asp Gly Glu Asp Pro
225 230 235 240

Glu Ala Glu Ala Ala Ala Thr Pro Pro Gly Asp Ala Ala Gln Pro
245 250 255

Thr Gly Pro Pro Pro Pro Gln Gln Gln Pro Thr Ala Ser Gln Ser Ser
260 265 270

MBI0034CIP.ST25.txt

Glu Val Thr Ala Gly Asp Gly Gly Gly Gly Gly Gly Leu Gly Met Tyr
275 280 285

Leu Gly Gly His Val Gly Ser Tyr Gln Gln Gln Gln Gln Gln Leu Pro
290 295 300

Gly Pro Gly Asp Asn Phe Gly Ser Trp Ser Gly Ser Ile Arg Pro Pro
305 310 315 320

Pro Phe

<210> 31
<211> 987
<212> DNA
<213> Oryza sativa

<220>
<223> G3404

<400> 31
atggatccgg tgacggcggc ggcggcgcac gggggtgggc accaccacca ccaccacttc 60
ggagcgccac cggtggcggc gttccaccac caccggttcc accacggcgg cggggcgcac 120
taccggcggc cggtccagca gtttcaggag gacgagcagc agcttggtggc ggcggcggcg 180
gcggctggtg ggatggcgaa gcaggagctg gtggatgaga gcaacaacac catcaacagc 240
ggcgggagca acgggagcgg cggggaggag cagaggcagc agtccgggga ggagcagcac 300
cagcaagggg cggcggcgcc ggtggtgatc cggcggtcca ggggcccggc cgccggctcc 360
aagaacaagc ccaagcctcc ggtcatcatc acgcgcgaca gcgccagcgc gctgcggggc 420
cacgtcctcg aggtcgctc cgggtgcgac ctgcgtcgaca gcgtcgccac gttcgcgcg 480
cgccgccagg tcggtgtctg cgtgctcagc gccaccggcg ccgtcaccaa cgtctccgtc 540
cggcagcccc gcgcggggcc cggcgccgct gtcaacctca ccggccgctt cgacatcctc 600
tcgctgtccg gtccttctc cccgcgcgcg gcgcctccct ccgccaccgg cctcaccgtc 660
tacgtctccg gcggccaggg gcaggctcgt ggcggcacgg tcgccggacc gctcatcgcc 720
gtcggccccg tcgtcatcat ggccgcctcg ttcgggaacg ccgcctacga gcgcctcccc 780
ctcgaggacg acgagccgcc gcagcacatg gcgggcggcg gccagtcctc gccgcgcgcg 840
ccgccgctgc cattaccacc acaccagcag ccgattcttc aagaccatct gccacacaac 900
ctgatgaacg gaatccacct ccccggcgac gccgcctacg gctggaccag cggcggcggc 960
ggcggcgggc gcgcggcgcc gtactga 987

<210> 32
<211> 328

<212> PRT

<213> Oryza sativa

<220>

<223> G3404 polypeptide

<400> 32

Met Asp Pro Val Thr Ala Ala Ala Ala His Gly Gly Gly His His His
1 5 10 15

His His His Phe Gly Ala Pro Pro Val Ala Ala Phe His His His Pro
20 25 30

Phe His His Gly Gly Gly Ala His Tyr Pro Ala Ala Phe Gln Gln Phe
35 40 45

Gln Glu Glu Gln Gln Gln Leu Val Ala Ala Ala Ala Ala Ala Gly Gly
50 55 60

Met Ala Lys Gln Glu Leu Val Asp Glu Ser Asn Asn Thr Ile Asn Ser
65 70 75 80

Gly Gly Ser Asn Gly Ser Gly Gly Glu Glu Gln Arg Gln Gln Ser Gly
85 90 95

Glu Glu Gln His Gln Gln Gly Ala Ala Ala Pro Val Val Ile Arg Arg
100 105 110

Pro Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Pro Pro Val
115 120 125

Ile Ile Thr Arg Asp Ser Ala Ser Ala Leu Arg Ala His Val Leu Glu
130 135 140

Val Ala Ser Gly Cys Asp Leu Val Asp Ser Val Ala Thr Phe Ala Arg
145 150 155 160

Arg Arg Gln Val Gly Val Cys Val Leu Ser Ala Thr Gly Ala Val Thr
165 170 175

Asn Val Ser Val Arg Gln Pro Gly Ala Gly Pro Gly Ala Val Val Asn
180 185 190

Leu Thr Gly Arg Phe Asp Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro
195 200 205

Pro Pro Ala Pro Pro Ser Ala Thr Gly Leu Thr Val Tyr Val Ser Gly
210 215 220

Gly Gln Gly Gln Val Val Gly Gly Thr Val Ala Gly Pro Leu Ile Ala
225 230 235 240

Val Gly Pro Val Val Ile Met Ala Ala Ser Phe Gly Asn Ala Ala Tyr
245 250 255

Glu Arg Leu Pro Leu Glu Asp Asp Glu Pro Pro Gln His Met Ala Gly
260 265 270

Gly Gly Gln Ser Ser Pro Pro Pro Pro Pro Leu Pro Leu Pro Pro His
275 280 285

Gln Gln Pro Ile Leu Gln Asp His Leu Pro His Asn Leu Met Asn Gly
290 295 300

Ile His Leu Pro Gly Asp Ala Ala Tyr Gly Trp Thr Ser Gly Gly Gly
305 310 315 320

Gly Gly Gly Arg Ala Ala Pro Tyr
325

<210> 33
<211> 870
<212> DNA
<213> Oryza sativa

<220>
<223> G3407

<400> 33
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cattggcggc atcccgaacg gcatgttgaa gaacgggagc ccaccggtgg cggcgcgcgc 120
cgacggatca acgcctaata gtggcatgcc gccgctgccg ccgccgccct ggtcgctccc 180
tgccggcgcc ggggggacca cctcgtcgcc gtcctcgagc ggcagcctct cgtacgccac 240
gttgctgaac gacgcggcga cgacgacgac gggccccgcc gcgatgagcg cgccggcgac 300
gctgccaccg acgacctgcc cctgcccgcc ggcgaggaac gcggcgaggc tgggtggcgcc 360
cggcggcgcg ggcgggggca ggaaggagcc cgcgaggag agtatctcga acctgccgtg 420
cagcgtcgcc accgccggcg aggcggcccc gggctgcgcc gactgcggct gccggagcgt 480
gacgttcgcc actgtccccg ccgccgagag cacgcacacc ccgcgctgcc ggcggcgcg 540
gtacgccgtc agcgctcga acacatcgca accggcggt acctcgagga tatgcgcct 600
gagcgcgttg gcgctctccc tggatgat caccggcggc ttgggcttgt tcttgagcc 660
cggcggcgcg ccgcgggggc ggcgagcgac gacctcgcc ccgccgatcc cggcgccacc 720

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ggccgtgctg ctgggccgc cgccaccgcc gctccccggc gagaggctgt cgtggccgcc      780
gtcgtcggag ccggcgccgc catcgtcgtg gcggagatgc agtgattggt ggtggtggag      840
gtagctggtg cccaaatcaa ggctgccat                                         870
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<210> 34
<211> 289
<212> PRT
<213> Oryza sativa
```

```
<220>
<223> G3407 polypeptide
```

```
<400> 34
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```
Met Ala Gly Leu Asp Leu Gly Thr Ser Tyr Leu His His His Gln Ser
1          5          10          15
```

```
Leu His Leu Arg His Asp Asp Gly Gly Ala Gly Ser Asp Asp Gly Gly
20          25          30
```

```
His Asp Asp Leu Ser Pro Gly Ser Gly Gly Gly Gly Gly Pro Ser Ser
35          40          45
```

```
Thr Ala Gly Gly Ala Gly Ile Gly Gly Gly Glu Val Val Ala Arg Arg
50          55          60
```

```
Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Val
65          70          75          80
```

```
Ile Ile Thr Arg Glu Ser Ala Asn Ala Leu Arg Ala His Ile Leu Glu
85          90          95
```

```
Val Ala Ala Gly Cys Asp Val Phe Glu Ala Leu Thr Ala Tyr Ala Arg
100         105         110
```

```
Arg Arg Gln Arg Gly Val Cys Val Leu Ser Ala Ala Gly Thr Val Ala
115         120         125
```

```
Asn Val Thr Leu Arg Gln Pro Gln Ser Ala Gln Pro Gly Pro Ala Ser
130         135         140
```

```
Pro Ala Val Ala Thr Leu His Gly Arg Phe Glu Ile Leu Ser Leu Ala
145         150         155         160
```

```
Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Gly Ala Thr Ser Leu Ala
165         170         175
```

Ala Phe Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Ser Val Ala
180 185 190

Gly Ala Leu Ile Ala Ala Gly Pro Val Val Val Val Ala Ala Ser Phe
195 200 205

Ser Asn Val Ala Tyr Glu Arg Leu Pro Leu Glu Asp Gly Asp Glu Val
210 215 220

Val Pro Pro Ala Pro Ala Gly Ser Asp Gln Gly Gly Gly Gly Ser Gly
225 230 235 240

Gly Met Pro Pro Leu Gly Val Asp Pro Ser Gly Gly Ala Ala Thr Gly
245 250 255

Gly Leu Pro Phe Phe Asn Met Pro Phe Gly Met Pro Pro Met Pro Val
260 265 270

Asp Gly His Ala Gly Trp Pro Gly Ala Gly Val Gly Arg Pro Pro Phe
275 280 285

Ser

<210> 35
<211> 1035
<212> DNA
<213> Glycine max

<220>
<223> G3462

<400> 35
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agcagggata acggagagga ccagaaccaa aacctcggca gccacgaagg gtcggagccc 120
ggaagcagcg gtcggaggcc acgtggcagg ccagcgggggt ccaagaacaa gcccaagccg 180
cccatagtca taattttttt aagccccaac gcgctccgaa gccacgtcct ggaaatcgcc 240
tccggccgcg atgtcgccga gagcatcgcc gccttcgccca accgccgccca ccgtggcggtg 300
tcggtcctca gcgggagtgg cattgtagcc aacgtcactc tccgccagcc cgccgcccc 360
gccggcgta taaccctcca cgggaggttc gagatactct ccctctcggg tgcctttttg 420
ccgtccccct cgccgtccgg cgccaccgga ctgaccgtct acctagccgg cgggcagggg 480
caggttgtcg gcggcaacgt ggcgggctct ctcgctgcct ccggaccggt gatggtgatc 540
gccgccactt tcgctaattgc cacttatgag aggttgacctc tggaggatga tcaaggtgag 600
gaggaaatgc aagtgcagca gcagcagcag cagcagcaac agcagcagca gcagcagcag 660

```

caacaacaat ctcaagggttt gggggaacag gtttcaatgc ctatgtataa tttgcctcct 720
aatttgctac acaatgggtca gaacatgcct catgatgtgt tctggggagc tccacctcgc 780
cctcctcctt ccttctgac acccttgcca atatgatcat gtctttaatc tctcactgac 840
ttgcgaatta agtactatgt taattaatct ctcacgggtt ttcttgcaag catagctagc 900
tagctagcaa ggtaggtat taggatgggt ttgttaatct gtgcttctta gagactcgag 960
tcaagtagat gatgttctta tctttaatat actttgtagt actactgggt tgtttattgt 1020
tttttttaaa aaaaaa 1035

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<210> 36
 <211> 265
 <212> PRT
 <213> Glycine max

<220>
 <223> G3462 polypeptide

<400> 36

Thr Arg Ser Asn Ser Asn Thr Asn Ala Asn Thr Asn Thr Asn Thr Thr
 1 5 10 15

Glu Glu Glu Val Ser Arg Asp Asn Gly Glu Asp Gln Asn Gln Asn Leu
 20 25 30

Gly Ser His Glu Gly Ser Glu Pro Gly Ser Ser Gly Arg Arg Pro Arg
 35 40 45

Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Pro Pro Ile Val Ile
 50 55 60

Ile Phe Leu Ser Pro Asn Ala Leu Arg Ser His Val Leu Glu Ile Ala
 65 70 75 80

Ser Gly Arg Asp Val Ala Glu Ser Ile Ala Ala Phe Ala Asn Arg Arg
 85 90 95

His Arg Gly Val Ser Val Leu Ser Gly Ser Gly Ile Val Ala Asn Val
 100 105 110

Thr Leu Arg Gln Pro Ala Ala Pro Ala Gly Val Ile Thr Leu His Gly
 115 120 125

Arg Phe Glu Ile Leu Ser Leu Ser Gly Ala Phe Leu Pro Ser Pro Ser
 130 135 140

Pro Ser Gly Ala Thr Gly Leu Thr Val Tyr Leu Ala Gly Gly Gln Gly
145 150 155 160

Gln Val Val Gly Gly Asn Val Ala Gly Ser Leu Val Ala Ser Gly Pro
165 170 175

Val Met Val Ile Ala Ala Thr Phe Ala Asn Ala Thr Tyr Glu Arg Leu
180 185 190

Pro Leu Glu Asp Asp Gln Gly Glu Glu Glu Met Gln Val Gln Gln Gln
195 200 205

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ser
210 215 220

Gln Gly Leu Gly Glu Gln Val Ser Met Pro Met Tyr Asn Leu Pro Pro
225 230 235 240

Asn Leu Leu His Asn Gly Gln Asn Met Pro His Asp Val Phe Trp Gly
245 250 255

Ala Pro Pro Arg Pro Pro Pro Ser Phe
260 265

<210> 37
<211> 708
<212> DNA
<213> Oryza sativa

<220>
<223> G3401

<400> 37
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ggcgggcgagc ccaaggacgg cgcggtggtg accggccgca accggcgccc ccgcggaagg 120
ccgcccgggct ccaagaacaa gcccaagccg cccatcttcg tgacgcggga cagcccgaac 180
gcgctgcgca gccacgtcat ggaggtggcc ggcgggcgccg atgtcgccga gtccatcgcg 240
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gacgtggccc tgcgccagcc ggccgcgccg agcgccgtgg tggcgctccg tgggcgggttc 360
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ctgaccgtgt acctcgccgg cgggcagggg caggtggtgg gcggcagcgt ggtggggacg 480
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708

<210> 38
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 <212> PRT
 <213> Oryza sativa
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 <223> G3401 polypeptide
 <400> 38

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Arg	Asn	Arg	Arg	Pro	Arg	Gly	Arg	Pro	Pro	Gly	Ser	Lys	Asn	Lys	Pro	35	40	45	
Lys	Pro	Pro	Ile	Phe	Val	Thr	Arg	Asp	Ser	Pro	Asn	Ala	Leu	Arg	Ser	50	55	60	
His	Val	Met	Glu	Val	Ala	Gly	Gly	Ala	Asp	Val	Ala	Glu	Ser	Ile	Ala	65	70	75	80
His	Phe	Ala	Arg	Arg	Arg	Gln	Arg	Gly	Val	Cys	Val	Leu	Ser	Gly	Ala	85	90	95	
Gly	Thr	Val	Thr	Asp	Val	Ala	Leu	Arg	Gln	Pro	Ala	Ala	Pro	Ser	Ala	100	105	110	
Val	Val	Ala	Leu	Arg	Gly	Arg	Phe	Glu	Ile	Leu	Ser	Leu	Thr	Gly	Thr	115	120	125	
Phe	Leu	Pro	Gly	Pro	Ala	Pro	Pro	Gly	Ser	Thr	Gly	Leu	Thr	Val	Tyr	130	135	140	
Leu	Ala	Gly	Gly	Gln	Gly	Gln	Val	Val	Gly	Gly	Ser	Val	Val	Gly	Thr	145	150	155	160
Leu	Thr	Ala	Ala	Gly	Pro	Val	Met	Val	Ile	Ala	Ser	Thr	Phe	Ala	Asn	165	170	175	
Ala	Thr	Tyr	Glu	Arg	Leu	Pro	Leu	Asp	Gln	Glu	Glu	Glu	Glu	Ala	Ala	180	185	190	

Ala Gly Gly Met Met Ala Pro Pro Pro Leu Met Ala Gly Ala Ala Asp
195 200 205

Pro Leu Leu Phe Gly Gly Gly Met His Asp Ala Gly Leu Ala Ala Trp
210 215 220

His His Ala Arg Pro Pro Pro Pro Pro Tyr
225 230 235

<210> 39
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<212> DNA
<213> Oryza sativa

<220>
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<223> n is a, c, g, or t

<220>
<223> G3556

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tagcacatta attaacatgg taaatgatta attaacctac tcaaacaact agggaaagaa 180
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<211> 258
<212> PRT
<213> Oryza sativa

<220>
<223> G3556 polypeptide

<400> 40

Met Gly Ser Ile Asp Gly His Ser Leu Gln Gln His Gln Gly Tyr Ser
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His Gly Gly Gly Ala Gly Gly Ser Asn Glu Glu Glu Glu Ala Ser Pro
20 25 30

Pro Pro Gly Gly Gly Ser Ala Thr Gly Ser Ala Gly Arg Arg Pro Arg
35 40 45

Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Val Val Val
50 55 60

Thr Arg Glu Ser Pro Asn Ala Met Arg Ser His Val Leu Glu Ile Ala
65 70 75 80

Ser Gly Ala Asp Ile Val Glu Ala Ile Ala Gly Phe Ser Arg Arg Arg
85 90 95

Gln Arg Gly Val Ser Val Leu Ser Gly Ser Gly Ala Val Thr Asn Val
100 105 110

Thr Leu Arg Gln Pro Ala Gly Thr Gly Ala Ala Ala Val Ala Leu Arg
115 120 125

Gly Arg Phe Glu Ile Leu Ser Met Ser Gly Ala Phe Leu Pro Ala Pro
130 135 140

Ala Pro Pro Gly Ala Thr Gly Leu Ala Val Tyr Leu Ala Gly Gly Gln
145 150 155 160

Gly Gln Val Val Gly Gly Ser Val Met Gly Glu Leu Ile Ala Ser Gly
165 170 175

Pro Val Met Val Ile Ala Ala Thr Phe Gly Asn Ala Thr Tyr Glu Arg
180 185 190

Leu Pro Leu Asp Gln Glu Gly Glu Glu Gly Ala Val Leu Ser Gly Ser
195 200 205

Glu Gly Ala Ala Ala Gln Met Glu Gln Gln Ser Ser Gly Gly Ala Val
210 215 220

Val Pro Pro Pro Met Tyr Ala Ala Val Gln Gln Thr Pro Pro His Asp
225 230 235 240

Met Phe Gly Gln Trp Gly His Ala Ala Val Ala Arg Pro Pro Pro Thr
245 250 255

Ser Phe

<210> 41
<211> 1116
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G1069

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tttagcgggc atggtggacc attcgggtctc ctcaggccat caccaaaacc atcaccacca 180
aagtcttctt accaaaggag atcttggaat agccatgaat cagagccaag acaacgacca 240
agacgaagaa gatgatccta gagaaggagc cggtgaggtg gtcaaccgta gaccaagagg 300
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caacgcactc cgtagccatg tcttgagat ctccgacggc agtgacgtcg ccgacacaat 420
cgctcacttc tcaagacgca ggcaacgcgg cggttgcggt ctcagcggga caggctcagt 480
cgctaacgtc accctccgcc aagccgccgc accaggaggt gtggtctctc tccaaggcag 540
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cgggtttaacg gtttacttag ccgggggtcca gggtcaggtc gttggaggta gcgttgtagg 660
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cggtgactca ccgcccagaa tcggtagtaa cctgcctgat ctatcaggga tggccggggc 840
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<210> 42
<211> 281
<212> PRT
<213> Arabidopsis thaliana

<220>
<223> G1069 polypeptide

<400> 42

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Asp His Ser Val Ser Ser Gly His His Gln Asn His His His Gln Ser
20 25 30

Leu Leu Thr Lys Gly Asp Leu Gly Ile Ala Met Asn Gln Ser Gln Asp
35 40 45

Asn Asp Gln Asp Glu Glu Asp Asp Pro Arg Glu Gly Ala Val Glu Val
50 55 60

Val Asn Arg Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro
65 70 75 80

Lys Ala Pro Ile Phe Val Thr Arg Asp Ser Pro Asn Ala Leu Arg Ser
85 90 95

His Val Leu Glu Ile Ser Asp Gly Ser Asp Val Ala Asp Thr Ile Ala
100 105 110

His Phe Ser Arg Arg Arg Gln Arg Gly Val Cys Val Leu Ser Gly Thr
115 120 125

Gly Ser Val Ala Asn Val Thr Leu Arg Gln Ala Ala Ala Pro Gly Gly
130 135 140

Val Val Ser Leu Gln Gly Arg Phe Glu Ile Leu Ser Leu Thr Gly Ala
145 150 155 160

Phe Leu Pro Gly Pro Ser Pro Pro Gly Ser Thr Gly Leu Thr Val Tyr
165 170 175

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Leu Ala Gly Val Gln Gly Gln Val Val Gly Gly Ser Val Val Gly Pro
180 185 190

Leu Leu Ala Ile Gly Ser Val Met Val Ile Ala Ala Thr Phe Ser Asn
195 200 205

Ala Thr Tyr Glu Arg Leu Pro Met Glu Glu Glu Glu Asp Gly Gly Gly
210 215 220

Ser Arg Gln Ile His Gly Gly Gly Asp Ser Pro Pro Arg Ile Gly Ser
225 230 235 240

Asn Leu Pro Asp Leu Ser Gly Met Ala Gly Pro Gly Tyr Asn Met Pro
245 250 255

Pro His Leu Ile Pro Asn Gly Ala Gly Gln Leu Gly His Glu Pro Tyr
260 265 270

Thr Trp Val His Ala Arg Pro Pro Tyr
275 280

<210> 43
<211> 1130
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G1945

<400> 43
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ttacacaaaa atccaaagac aaatctgaaa tctctaataa acaaataccat aaaataagaa 180
aaacaaagat gaaagggtgaa tacagagagc aaaagagtaa cgaaatgttt tccaagcttc 240
ctcatcatca acaacaacag caacaacaac aacaacaaca ctctcttacc tctcacttcc 300
acctctcttc caccgtaacc cccaccgtcg atgactcctc catcgaagtg gtccgacgtc 360
cacgtggcag accaccaggt tccaaaaaca aacctaacc acccgtcttc gtcacacgtg 420
acaccgaccc tcctatgagt cttacatcc tcgaagtctc ttcaggaaac gacgtcgtcg 480
aagccatcaa ccgtttctgc cgccgtaa atccatcgag ctgcgtcctt agtggtctctg 540
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gacaaatcat cggagggttc gtcgctggtc cacttatttc ggcaggaaca gtttacgtca 780

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agtcaggaca gatggcgggg agtggaggag agtcgtgtgg ggtatcaatg tacagttgcc      960
acatgggtgg ctctgatgtt atttgggccc ctacagccag agctccaccg ccatactaac     1020
caatccttct ttcacaaatc tctttctttc tttttttggt tttttttggt ttggggttagg     1080
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<210> 44
 <211> 276
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G1945polypeptide

<400> 44

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Leu Pro His His Gln Gln Gln Gln Gln Gln Gln Gln Gln His Ser
 20 25 30

Leu Thr Ser His Phe His Leu Ser Ser Thr Val Thr Pro Thr Val Asp
 35 40 45

Asp Ser Ser Ile Glu Val Val Arg Arg Pro Arg Gly Arg Pro Pro Gly
 50 55 60

Ser Lys Asn Lys Pro Lys Pro Pro Val Phe Val Thr Arg Asp Thr Asp
 65 70 75 80

Pro Pro Met Ser Pro Tyr Ile Leu Glu Val Pro Ser Gly Asn Asp Val
 85 90 95

Val Glu Ala Ile Asn Arg Phe Cys Arg Arg Lys Ser Ile Gly Val Cys
 100 105 110

Val Leu Ser Gly Ser Gly Ser Val Ala Asn Val Thr Leu Arg Gln Pro
 115 120 125

Ser Pro Ala Ala Leu Gly Ser Thr Ile Thr Phe His Gly Lys Phe Asp
 130 135 140

Leu Leu Ser Val Ser Ala Thr Phe Leu Pro Pro Pro Pro Arg Thr Ser
 145 150 155 160

Leu Ser Pro Pro Val Ser Asn Phe Phe Thr Val Ser Leu Ala Gly Pro
165 170 175

Gln Gly Gln Ile Ile Gly Gly Phe Val Ala Gly Pro Leu Ile Ser Ala
180 185 190

Gly Thr Val Tyr Val Ile Ala Ala Ser Phe Asn Asn Pro Ser Tyr His
195 200 205

Arg Leu Pro Ala Glu Glu Glu Gln Lys His Ser Ala Gly Thr Gly Glu
210 215 220

Arg Glu Gly Gln Ser Pro Pro Val Ser Gly Gly Gly Glu Glu Ser Gly
225 230 235 240

Gln Met Ala Gly Ser Gly Gly Glu Ser Cys Gly Val Ser Met Tyr Ser
245 250 255

Cys His Met Gly Gly Ser Asp Val Ile Trp Ala Pro Thr Ala Arg Ala
260 265 270

Pro Pro Pro Tyr
275

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<211> 1050
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G2155

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caatctttgt caccattgac cctcctatga gtccttacat cctcgaagtg ccatccggaa 240
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aagctccatc gccgtactga ccacaaatcc atctcggtca aactagggtt tcttcttctt      780
tagatcatca agaatcaaca aaaagattgc atttttagat tctttgtaat atcataattg      840
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catatttgta gtttgatttg actatcccca agttttgtat tttatcatat aaatttttgc      960
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<210> 46
 <211> 225
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G2155 polypeptide

<400> 46

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Ser Lys Asn Lys Pro Lys Ala Pro Ile Phe Val Thr Ile Asp Pro Pro
 35 40 45

Met Ser Pro Tyr Ile Leu Glu Val Pro Ser Gly Asn Asp Val Val Glu
 50 55 60

Ala Leu Asn Arg Phe Cys Arg Gly Lys Ala Ile Gly Phe Cys Val Leu
 65 70 75 80

Ser Gly Ser Gly Ser Val Ala Asp Val Thr Leu Arg Gln Pro Ser Pro
 85 90 95

Ala Ala Pro Gly Ser Thr Ile Thr Phe His Gly Lys Phe Asp Leu Leu
 100 105 110

Ser Val Ser Ala Thr Phe Leu Pro Pro Leu Pro Pro Thr Ser Leu Ser
 115 120 125

Pro Pro Val Ser Asn Phe Phe Thr Val Ser Leu Ala Gly Pro Gln Gly
 130 135 140

Lys Val Ile Gly Gly Phe Val Ala Gly Pro Leu Val Ala Ala Gly Thr
145 150 155 160

Val Tyr Phe Val Ala Thr Ser Phe Lys Asn Pro Ser Tyr His Arg Leu
165 170 175

Pro Ala Thr Glu Glu Glu Gln Arg Asn Ser Ala Glu Gly Glu Glu Glu
180 185 190

Gly Gln Ser Pro Pro Val Ser Gly Gly Gly Gly Glu Ser Met Tyr Val
195 200 205

Gly Gly Ser Asp Val Ile Trp Asp Pro Asn Ala Lys Ala Pro Ser Pro
210 215 220

Tyr
225

<210> 47
<211> 1295
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G1070

<400> 47
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cactctcttc ttcttttttt gatccaattc caccattgaa tcatagatca tggatccagt 180
acaatctcat ggatcacaaa gctctctacc tcctcctttc cacgcaagag actttcaatt 240
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aaccgatggg gaccaacaag gaggatcagg aggaaaccga caaatcaaga tggatcgtga 360
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agatatacac ggtgggttcag gagaaggagg tgggtggctcc ggaggagatc atcagatgac 480
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<210> 48
 <211> 324
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G1070 polypeptide

<400> 48

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Phe His Ala Arg Asp Phe Gln Leu His Leu Gln Gln Gln Gln Gln Glu
          20          25          30

Phe Phe Leu His His His Gln Gln Gln Arg Asn Gln Thr Asp Gly Asp
          35          40          45

Gln Gln Gly Gly Ser Gly Gly Asn Arg Gln Ile Lys Met Asp Arg Glu
          50          55          60

Glu Thr Ser Asp Asn Ile Asp Asn Ile Ala Asn Asn Ser Gly Ser Glu
          65          70          75          80

Gly Lys Asp Ile Asp Ile His Gly Gly Ser Gly Glu Gly Gly Gly Gly
          85          90          95

Ser Gly Gly Asp His Gln Met Thr Arg Arg Pro Arg Gly Arg Pro Ala
          100          105          110

Gly Ser Lys Asn Lys Pro Lys Pro Pro Ile Ile Ile Thr Arg Asp Ser
          115          120          125

Ala Asn Ala Leu Arg Thr His Val Met Glu Ile Gly Asp Gly Cys Asp
          130          135          140

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Leu Val Glu Ser Val Ala Thr Phe Ala Arg Arg Arg Gln Arg Gly Val
145 150 155 160

Cys Val Met Ser Gly Thr Gly Asn Val Thr Asn Val Thr Ile Arg Gln
165 170 175

Pro Gly Ser His Pro Ser Pro Gly Ser Val Val Ser Leu His Gly Arg
180 185 190

Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala Pro
195 200 205

Pro Thr Ala Thr Gly Leu Ser Val Tyr Leu Ala Gly Gly Gln Gly Gln
210 215 220

Val Val Gly Gly Ser Val Val Gly Pro Leu Leu Cys Ala Gly Pro Val
225 230 235 240

Val Val Met Ala Ala Ser Phe Ser Asn Ala Ala Tyr Glu Arg Leu Pro
245 250 255

Leu Glu Glu Asp Glu Met Gln Thr Pro Val His Gly Gly Gly Gly Gly
260 265 270

Gly Ser Leu Glu Ser Pro Pro Met Met Gly Gln Gln Leu Gln His Gln
275 280 285

Gln Gln Ala Met Ser Gly His Gln Gly Leu Pro Pro Asn Leu Leu Gly
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Ser Val Gln Leu Gln Gln Gln His Asp Gln Ser Tyr Trp Ser Thr Gly
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Arg Pro Pro Tyr

<210> 49
<211> 1020
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G2657

<400> 49
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<210> 50
 <211> 339
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G2657 polypeptide

<400> 50

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Gln Gln Gln His Gln Gln Gln Gln Gln Gln Gln Phe Phe Leu His His
 35 40 45

His Gln Gln Pro Gln Arg Asn Leu Asp Gln Asp His Glu Gln Gln Gly
 50 55 60

Gly Ser Ile Leu Asn Arg Ser Ile Lys Met Asp Arg Glu Glu Thr Ser
 65 70 75 80

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Asp Asn Met Asp Asn Ile Ala Asn Thr Asn Ser Gly Ser Glu Gly Lys
85 90 95

Glu Met Ser Leu His Gly Gly Glu Gly Gly Ser Gly Gly Gly Gly Ser
100 105 110

Gly Glu Gln Met Thr Arg Arg Pro Arg Gly Arg Pro Ala Gly Ser Lys
115 120 125

Asn Lys Pro Lys Ala Pro Ile Ile Ile Thr Arg Asp Ser Ala Asn Ala
130 135 140

Leu Arg Thr His Val Met Glu Ile Gly Asp Gly Cys Asp Ile Val Asp
145 150 155 160

Cys Met Ala Thr Phe Ala Arg Arg Arg Gln Arg Gly Val Cys Val Met
165 170 175

Ser Gly Thr Gly Ser Val Thr Asn Val Thr Ile Arg Gln Pro Gly Ser
180 185 190

Pro Pro Gly Ser Val Val Ser Leu His Gly Arg Phe Glu Ile Leu Ser
195 200 205

Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Ala Ala Thr Gly
210 215 220

Leu Ser Val Tyr Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Ser
225 230 235 240

Val Val Gly Pro Leu Leu Cys Ser Gly Pro Val Val Val Met Ala Ala
245 250 255

Ser Phe Ser Asn Ala Ala Tyr Glu Arg Leu Pro Leu Glu Glu Asp Glu
260 265 270

Met Gln Thr Pro Val Gln Gly Gly Gly Gly Gly Gly Gly Gly Gly
275 280 285

Gly Met Gly Ser Pro Pro Met Met Gly Gln Gln Gln Ala Met Ala Ala
290 295 300

Met Ala Ala Ala Gln Gly Leu Pro Pro Asn Leu Leu Gly Ser Val Gln
305 310 315 320

Leu Pro Pro Pro Gln Gln Asn Asp Gln Gln Tyr Trp Ser Thr Gly Arg
325 330 335

Pro Pro Tyr

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 <211> 1084
 <212> DNA
 <213> Arabidopsis thaliana

<220>
 <223> G1075

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 <211> 285
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G1075 polypeptide

<400> 52

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20 25 30

Asp Gly Gly Ala Gly Gly Asn His His His His His His Asn His Asn
35 40 45

His His Gln Gly Leu Asp Leu Ile Ala Ser Asn Asp Asn Ser Gly Leu
50 55 60

Gly Gly Gly Gly Gly Gly Gly Ser Gly Asp Leu Val Met Arg Arg Pro
65 70 75 80

Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Pro Pro Val Ile
85 90 95

Val Thr Arg Glu Ser Ala Asn Thr Leu Arg Ala His Ile Leu Glu Val
100 105 110

Gly Ser Gly Cys Asp Val Phe Glu Cys Ile Ser Thr Tyr Ala Arg Arg
115 120 125

Arg Gln Arg Gly Ile Cys Val Leu Ser Gly Thr Gly Thr Val Thr Asn
130 135 140

Val Ser Ile Arg Gln Pro Thr Ala Ala Gly Ala Val Val Thr Leu Arg
145 150 155 160

Gly Thr Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro
165 170 175

Ala Pro Pro Gly Ala Thr Ser Leu Thr Ile Phe Leu Ala Gly Ala Gln
180 185 190

Gly Gln Val Val Gly Gly Asn Val Val Gly Glu Leu Met Ala Ala Gly
195 200 205

Pro Val Met Val Met Ala Ala Ser Phe Thr Asn Val Ala Tyr Glu Arg
210 215 220

Leu Pro Leu Asp Glu His Glu Glu His Leu Gln Ser Gly Gly Gly Gly
225 230 235 240

Gly Gly Gly Asn Met Tyr Ser Glu Ala Thr Gly Gly Gly Gly Gly Leu
 245 250 255

Pro Phe Phe Asn Leu Pro Met Ser Met Pro Gln Ile Gly Val Glu Ser
 260 265 270

Trp Gln Gly Asn His Ala Gly Ala Gly Arg Ala Pro Phe
 275 280 285

<210> 53
 <211> 1342
 <212> DNA
 <213> Arabidopsis thaliana

<220>
 <223> G1076

<400> 53
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 ttgcttttga tgtgggcatg gctgggtcttg atctaggcac agcttttcgt tacgttaatc 240
 accagctcca tcgtcccgat ctccaccttc accacaattc ctccctccgat gacgtcactc 300
 ccggagccgg gatgggtcat ttcaccgtcg acgacgaaga caacaacaac aaccatcaag 360
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 cagctggagg aggaggagga cttccgttct ttaatttacc gatgaatatg caaccaaag 1020
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 tatatattga taatcattat atatataccg gcggagaagc ttttccggcg aagaatttgc 1140
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 gatttcggac attgtcttgt tcatcatgtt aagcttaggt ttattttttg tcgtttgtag 1260

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 aaaaaaaaaat tctcaaaaaa aa 1342

<210> 54
 <211> 292
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G1076 polypeptide

<400> 54

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Leu His Arg Pro Asp Leu His Leu His His Asn Ser Ser Ser Asp Asp
 20 25 30

Val Thr Pro Gly Ala Gly Met Gly His Phe Thr Val Asp Asp Glu Asp
 35 40 45

Asn Asn Asn Asn His Gln Gly Leu Asp Leu Ala Ser Gly Gly Gly Ser
 50 55 60

Gly Ser Ser Gly Gly Gly Gly Gly His Gly Gly Gly Gly Asp Val Val
 65 70 75 80

Gly Arg Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys
 85 90 95

Pro Pro Val Ile Ile Thr Arg Glu Ser Ala Asn Thr Leu Arg Ala His
 100 105 110

Ile Leu Glu Val Thr Asn Gly Cys Asp Val Phe Asp Cys Val Ala Thr
 115 120 125

Tyr Ala Arg Arg Arg Gln Arg Gly Ile Cys Val Leu Ser Gly Ser Gly
 130 135 140

Thr Val Thr Asn Val Ser Ile Arg Gln Pro Ser Ala Ala Gly Ala Val
 145 150 155 160

Val Thr Leu Gln Gly Thr Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe
 165 170 175

Leu Pro Pro Pro Ala Pro Pro Gly Ala Thr Ser Leu Thr Ile Phe Leu
 180 185 190

Ala Gly Gly Gln Gly Gln Val Val Gly Gly Ser Val Val Gly Glu Leu
195 200 205

Thr Ala Ala Gly Pro Val Ile Val Ile Ala Ala Ser Phe Thr Asn Val
210 215 220

Ala Tyr Glu Arg Leu Pro Leu Glu Glu Asp Glu Gln Gln Gln Gln Leu
225 230 235 240

Gly Gly Gly Ser Asn Gly Gly Gly Asn Leu Phe Pro Glu Val Ala Ala
245 250 255

Gly Gly Gly Gly Gly Leu Pro Phe Phe Asn Leu Pro Met Asn Met Gln
260 265 270

Pro Asn Val Gln Leu Pro Val Glu Gly Trp Pro Gly Asn Ser Gly Gly
275 280 285

Arg Gly Pro Phe
290

<210> 55
<211> 983
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G280

<400> 55
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tccaccatgg ctcagcttca gatacgcat catcagaact tccgtcgttt tctctccac 180
cttatectca gatgataatg gaagcgattg agtccttgaa cgataagaac ggctgcaaca 240
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cgctgctcag ctaccatctc aaccagatga agaaaaccgg tcagctaatac atgggtgaaga 360
acaattatat gaaaccagat ccagatgctc ctccctaagcg tggctcgtggc cgtcctccga 420
agcagaagac tcaggccgaa tctgacgccg ctgctgctgc tgttggtgct gccaccgtcg 480
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ctccccagga gaaggctcatt accggatctg gaaggccacg aggacgacca ccgaagagac 600
cgagaacaga ttcggagacg gttgctgcgc cggaaccggc agctcaggcg acaggtgagc 660
gtaggggacg tgggagacct ccgaaggtga agccgacggg ggttgctccg gttgggtgct 720

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gaattaatcg gtacttatgc aatttcggaa tcttttagtta ctgaaaaatg gaatctctta      780
gagagtaaga gagtgcttta atttagctta attagattta tttggatttc tttcagtatt      840
tggattgtaa actttagaat ttgtgtgtgt gttgttgctt agtcctgaga taagatataa      900
cattagcgac tgtgtattat tattattact gcattgtggt atgtgaaact ttgttctctt      960
gttgaaaaaa aaaaaaaaaa aaa                                             983

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<210> 56
 <211> 204
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G280 polypeptide

<400> 56

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Met Ala Phe Asp Leu His His Gly Ser Ala Ser Asp Thr His Ser Ser
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Glu Leu Pro Ser Phe Ser Leu Pro Pro Tyr Pro Gln Met Ile Met Glu
      20              25              30

Ala Ile Glu Ser Leu Asn Asp Lys Asn Gly Cys Asn Lys Thr Thr Ile
      35              40              45

Ala Lys His Ile Glu Ser Thr Gln Gln Thr Leu Pro Pro Ser His Met
      50              55              60

Thr Leu Leu Ser Tyr His Leu Asn Gln Met Lys Lys Thr Gly Gln Leu
 65              70              75              80

Ile Met Val Lys Asn Asn Tyr Met Lys Pro Asp Pro Asp Ala Pro Pro
      85              90              95

Lys Arg Gly Arg Gly Arg Pro Pro Lys Gln Lys Thr Gln Ala Glu Ser
      100             105             110

Asp Ala Ala Ala Ala Ala Val Val Ala Ala Thr Val Val Ser Thr Asp
      115             120             125

Pro Pro Arg Ser Arg Gly Arg Pro Pro Lys Pro Lys Asp Pro Ser Glu
      130             135             140

Pro Pro Gln Glu Lys Val Ile Thr Gly Ser Gly Arg Pro Arg Gly Arg
      145             150             155             160

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Pro Pro Lys Arg Pro Arg Thr Asp Ser Glu Thr Val Ala Ala Pro Glu
165 170 175

Pro Ala Ala Gln Ala Thr Gly Glu Arg Arg Gly Arg Gly Arg Pro Pro
180 185 190

Lys Val Lys Pro Thr Val Val Ala Pro Val Gly Cys
195 200

<210> 57
<211> 1964
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G1367

<400> 57
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atcctccatg gatccttctc tctctgcaac caatgatcct catcatcctc ctctcctca 180
gttcacatct ttccctcctt tcaccaacac caacccttcc gcctctccaa accaccctt 240
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gcctatgaag ccgatgagaa gctttgctcg tactggaaaa cccgtaggaa gaccagaaa 1260

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 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G1367 polypeptide

<400> 58

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 20 25 30

Ser Pro Asn His Pro Phe Phe Thr Gly Pro Thr Ala Val Ala Pro Pro
 35 40 45

Asn Asn Ile His Leu Tyr Gln Ala Ala Pro Pro Gln Gln Pro Gln Thr
 50 55 60

Ser Pro Val Pro Pro His Pro Ser Ile Ser His Pro Pro Tyr Ser Asp
 65 70 75 80

Met Ile Cys Thr Ala Ile Ala Ala Leu Asn Glu Pro Asp Gly Ser Ser
 85 90 95

Lys Gln Ala Ile Ser Arg Tyr Ile Glu Arg Ile Tyr Thr Gly Ile Pro
 100 105 110

Thr Ala His Gly Ala Leu Leu Thr His His Leu Lys Thr Leu Lys Thr
115 120 125

Ser Gly Ile Leu Val Met Val Lys Lys Ser Tyr Lys Leu Ala Ser Thr
130 135 140

Pro Pro Pro Pro Pro Pro Thr Ser Val Ala Pro Ser Leu Glu Pro Pro
145 150 155 160

Arg Ser Asp Phe Ile Val Asn Glu Asn Gln Pro Leu Pro Asp Pro Val
165 170 175

Leu Ala Ser Ser Thr Pro Gln Thr Ile Lys Arg Gly Arg Gly Arg Pro
180 185 190

Pro Lys Ala Lys Pro Asp Val Val Gln Pro Gln Pro Leu Thr Asn Gly
195 200 205

Lys Leu Thr Trp Glu Gln Ser Glu Leu Pro Val Ser Arg Pro Glu Glu
210 215 220

Ile Gln Ile Gln Pro Pro Gln Leu Pro Leu Gln Pro Gln Gln Pro Val
225 230 235 240

Lys Arg Pro Pro Gly Arg Pro Arg Lys Asp Gly Thr Ser Pro Thr Val
245 250 255

Lys Pro Ala Ala Ser Val Ser Gly Gly Val Glu Thr Val Lys Arg Arg
260 265 270

Gly Arg Pro Pro Ser Gly Arg Ala Ala Gly Arg Glu Arg Lys Pro Ile
275 280 285

Val Val Ser Ala Pro Ala Ser Val Phe Pro Tyr Val Ala Asn Gly Gly
290 295 300

Val Arg Arg Arg Gly Arg Pro Lys Arg Val Asp Ala Gly Gly Ala Ser
305 310 315 320

Ser Val Ala Pro Pro Pro Pro Pro Pro Thr Asn Val Glu Ser Gly Gly
325 330 335

Glu Glu Val Ala Val Lys Lys Arg Gly Arg Gly Arg Pro Pro Lys Ile
340 345 350

Gly Gly Val Ile Arg Lys Pro Met Lys Pro Met Arg Ser Phe Ala Arg
355 360 365

Thr Gly Lys Pro Val Gly Arg Pro Arg Lys Asn Ala Val Ser Val Gly
370 375 380

Ala Ser Gly Arg Gln Asp Gly Asp Tyr Gly Glu Leu Lys Lys Lys Phe
385 390 395 400

Glu Leu Phe Gln Ala Arg Ala Lys Asp Ile Val Ile Val Leu Lys Ser
405 410 415

Glu Ile Gly Gly Ser Gly Asn Gln Ala Val Val Gln Ala Ile Gln Asp
420 425 430

Leu Glu Gly Ile Ala Glu Thr Thr Asn Glu Pro Lys His Met Glu Glu
435 440 445

Val Gln Leu Pro Asp Glu Glu His Leu Glu Thr Glu Pro Glu Ala Glu
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<210> 59
<211> 1878
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G2787

<400> 59
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gaacagcagc aagttcaatc acctgttccg gttccgactc cggttacaga gtcggcgaag 840
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gaagaagaaa tagtagactc gttaatggtg ttgttgctcg tgtgtcttta accaaacctat 1800
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<210> 60
 <211> 480
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> G2787 polypeptide

<400> 60

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Phe	Pro	His	Phe	Pro	Thr	Ser	Asn	His	His	Pro	Leu	Gly	Pro	Asn	Pro
			20					25					30		

MBI0034CIP.ST25.txt

Tyr Asn Asn His Val Val Phe Gln Pro Gln Pro Gln Thr Gln Thr Gln
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 Ile Pro Gln Pro Gln Met Phe Gln Leu Ser Pro His Val Ser Met Pro
 50 55 60

 His Pro Pro Tyr Ser Glu Met Ile Cys Ala Ala Ile Ala Ala Leu Asn
 65 70 75 80

 Glu Pro Asp Gly Ser Ser Lys Met Ala Ile Ser Arg Tyr Ile Glu Arg
 85 90 95

 Cys Tyr Thr Gly Leu Thr Ser Ala His Ala Ala Leu Leu Thr His His
 100 105 110

 Leu Lys Thr Leu Lys Thr Ser Gly Val Leu Ser Met Val Lys Lys Ser
 115 120 125

 Tyr Lys Ile Ala Gly Ser Ser Thr Pro Pro Ala Ser Val Ala Val Ala
 130 135 140

 Ala Ala Ala Ala Ala Gln Gly Leu Asp Val Pro Arg Ser Glu Ile Leu
 145 150 155 160

 His Ser Ser Asn Asn Asp Pro Met Ala Ser Gly Ser Ala Ser Gln Pro
 165 170 175

 Leu Lys Arg Gly Arg Gly Arg Pro Pro Lys Pro Lys Pro Glu Ser Gln
 180 185 190

 Pro Gln Pro Leu Gln Gln Leu Pro Pro Thr Asn Gln Val Gln Ala Asn
 195 200 205

 Gly Gln Pro Ile Trp Glu Gln Gln Gln Val Gln Ser Pro Val Pro Val
 210 215 220

 Pro Thr Pro Val Thr Glu Ser Ala Lys Arg Gly Pro Gly Arg Pro Arg
 225 230 235 240

 Lys Asn Gly Ser Ala Ala Pro Ala Thr Ala Pro Ile Val Gln Ala Ser
 245 250 255

 Val Met Ala Gly Ile Met Lys Arg Arg Gly Arg Pro Pro Gly Arg Arg
 260 265 270

 Ala Ala Gly Arg Gln Arg Lys Pro Lys Ser Val Ser Ser Thr Ala Ser
 275 280 285

Val Tyr Pro Tyr Val Ala Asn Gly Ala Arg Arg Arg Gly Arg Pro Arg
290 295 300

Arg Val Val Asp Pro Ser Ser Ile Val Ser Val Ala Pro Val Gly Gly
305 310 315 320

Glu Asn Val Ala Ala Val Ala Pro Gly Met Lys Arg Gly Arg Gly Arg
325 330 335

Pro Pro Lys Ile Gly Gly Val Ile Ser Arg Leu Ile Met Lys Pro Lys
340 345 350

Arg Gly Arg Gly Arg Pro Val Gly Arg Pro Arg Lys Ile Gly Thr Ser
355 360 365

Val Thr Thr Gly Thr Gln Asp Ser Gly Glu Leu Lys Lys Lys Phe Asp
370 375 380

Ile Phe Gln Glu Lys Val Lys Glu Ile Val Lys Val Leu Lys Asp Gly
385 390 395 400

Val Thr Ser Glu Asn Gln Ala Val Val Gln Ala Ile Lys Asp Leu Glu
405 410 415

Ala Leu Thr Val Thr Glu Thr Val Glu Pro Gln Val Met Glu Glu Val
420 425 430

Gln Pro Glu Glu Thr Ala Ala Pro Gln Thr Glu Ala Gln Gln Thr Glu
435 440 445

Ala Ala Glu Thr Gln Gly Gly Gln Glu Glu Gly Gln Glu Arg Glu Gly
450 455 460

Glu Thr Gln Thr Gln Thr Glu Ala Glu Ala Met Gln Glu Ala Leu Phe
465 470 475 480

<210> 61
<211> 1772
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G3045

<400> 61
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agctgcagct tccttcactt tcttttgctg caacattttt catttcagta acttatcatc 120

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agattctttc tttttagttg aaatgaatcc attttaatta actaatcaaa tgaccattca 180
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tgtgtccac acaacataat gtctaaatca aattgatgca gggatacagt aatgtttacg 300
aaaaaccatt atagaagcta agtggggata gttcacttac taagagtgcg gttcttttct 360
tgagatctcc gacgtttgca gctaccggtg ccactgaagt gctcttttgt tcatgcatag 420
aaaacccgac tttgacataa gtatacacac agttgtataa gcatggttat gtcttacatg 480
aactcttgta gatattgact caaatgaaat gataatgact aaccaaatag atttcaagaa 540
atacarcaaaa tccagatact atacacatct tttcaaaata ttacgaatca tttcaaattc 600
tgcagaacct aaaattaacc agatttgaga ccaccagaga caaataacat acaactctaa 660
actttttcca ctatatatgc agaacaaaca gtcaagaaca accgtataat tggatatatac 720
cttttgtaa aattatacat taagcattgt tatgtctaac atgaactaaa cacttgtgaa 780
atattttgg actcaaatta catgataact tcttaccaaa tagaccaatc actttcactt 840
ccacattata caaaaaaaga tttaatgaaa tacacaaaaa tccagataag atgcacatct 900
tttcaaagaa attacgaata atatcagata cttcacactc acaatagacc acatttgaga 960
caaataaaga cattactctg aactttatct actatatgca gaagaaacag tcaagaagaa 1020
caatattaaa taagacattt tcccaaaata caccaaaatc cagataagat acacattttt 1080
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aatcatataa ttggtatcag accatttcta aatttctttt gacattttgt gaataaagat 1260
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gccgccacag acgtagaagg aacagcctga gctacgtttc ttttcggacg accacttggt 1560
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ggtcgaccac gaccgcgttt ctgagaagca gtatcagtag ctgagacgcc ggtggcatcc 1680
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gacgcgggag gagtaagagc tgttttcgcc at 1772

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<210> 62
 <211> 189
 <212> PRT
 <213> Arabidopsis thaliana

<220>

<223> G3045 polypeptide

<400> 62

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Arg Ser Gly Thr Pro Gly Asp Ala Ser Gly Asn Lys Pro Gln Thr Asp
20 25 30

Ala Thr Gly Val Ser Ala Thr Asp Thr Ala Ser Gln Lys Arg Gly Arg
35 40 45

Gly Arg Pro Pro Lys Ala Lys Ser Asp Ser Ser Gln Ile Gly Ala Val
50 55 60

Ser Ala Lys Ala Ser Thr Lys Pro Ser Gly Arg Pro Lys Arg Asn Val
65 70 75 80

Ala Gln Ala Val Pro Ser Thr Ser Val Ala Ala Ala Val Lys Lys Arg
85 90 95

Gly Arg Ala Lys Arg Ser Thr Val Thr Ala Ala Val Val Thr Thr Ala
100 105 110

Thr Gly Glu Gly Ser Arg Lys Arg Gly Arg Pro Lys Lys Asp Asp Val
115 120 125

Ala Ala Ala Thr Val Pro Ala Glu Thr Val Val Ala Pro Ala Lys Arg
130 135 140

Arg Gly Arg Lys Pro Thr Val Glu Val Ala Ala Gln Pro Val Arg Arg
145 150 155 160

Thr Arg Lys Val Cys Phe Ser Leu Ile Ser Leu Ser Leu Phe Thr Lys
165 170 175

Cys Gln Lys Lys Phe Arg Asn Gly Leu Ile Pro Ile Ile
180 185

<210> 63

<211> 534

<212> DNA

<213> Lycopersicon esculentum

<220>

<223> BG134451

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<400> 63
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acgcctaacg cactccgatc tcacgtgctt gaagtttcga ccgatgttga tatcatggaa      180
agtatctcca attacgcaag gcggagaggg agaggtgttt gtattcttag tggtagcggc      240
acagttacca acgtcaacct tcgtcagcct gctgcaagtg tagtcacact ccacggacgt      300
ttcgaaatac ttagcctctc aggtacggtg cttcctccgc ctgcaccgcc cgcctccagt      360
gggatctcta tattttttatc aggtggacaa ggacaagtgg ttggaggatc cgttgtaggg      420
cctttgatcg catcaggtcc agtcgtctta atggctgcct cttttgctaa tgctgtattt      480
gaacgacttc ctttgaggga agatgatgag gctcctgcta atgttcctac taca          534

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<210> 64
<211> 178
<212> PRT
<213> Lycopersicon esculentum

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<220>
<223> BG134451 polypeptide

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<400> 64

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Gly Glu Ser Asp Ser Asp Ala Gly Ala Ser Ser Gly Gly Gly Ala Pro
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Asn Arg Arg Pro Arg Gly Arg Pro Pro Gly Ser Lys Asn Lys Pro Lys
          20              25              30

Pro Pro Ile Ile Val Thr Arg Asp Thr Pro Asn Ala Leu Arg Ser His
          35              40              45

Val Leu Glu Val Ser Thr Asp Val Asp Ile Met Glu Ser Ile Ser Asn
          50              55              60

Tyr Ala Arg Arg Arg Gly Arg Gly Val Cys Ile Leu Ser Gly Ser Gly
65              70              75              80

Thr Val Thr Asn Val Asn Leu Arg Gln Pro Ala Ala Ser Val Val Thr
          85              90              95

Leu His Gly Arg Phe Glu Ile Leu Ser Leu Ser Gly Thr Val Leu Pro
          100              105              110

Pro Pro Ala Pro Pro Ala Ser Ser Gly Ile Ser Ile Phe Leu Ser Gly
          115              120              125

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Gly Gln Gly Gln Val Val Gly Gly Ser Val Val Gly Pro Leu Ile Ala
130 135 140

Ser Gly Pro Val Val Leu Met Ala Ala Ser Phe Ala Asn Ala Val Phe
145 150 155 160

Glu Arg Leu Pro Leu Glu Glu Asp Asp Glu Ala Pro Ala Asn Val Pro
165 170 175

Thr Thr

<210> 65
<211> 747
<212> DNA
<213> Brassica oleracea

<220>
<223> BH566718

<400> 65
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ccaacaacct gaccttgacc accagctaag taaatagtta aaccagtgga tccagggtgga 180
gccggtccag gtaagaaaga accggttaga gaaagaatct caaacctccc ttgtaacgcc 240
aatacagccg caccaccagg ggcagctgca acgggagcca ctgatgggtg acggagtgtg 300
acgttagcca ccgtgccgtt accgctcaag atgcagatgc cacgttggcg ccgcctagcg 360
aaagtagcta gggtttctat gacatcagtc ccactagcga tctccatgac atggctcttg 420
agagcgtttg gagaatcacg cgtgacaaag attggtggct ttggtttggt cttggaacca 480
gcaggacgtc cacgtggtcg gcgcgtggga gcttccacgg ctcttcacg tggctcgcg 540
tcgtcgccgc tcaagttgtc tctatcgtct tcgttggtgt tgttggtgtt gacttcttgg 600
tgatgatgat ggtggttggt atgacctgag accatggcca tgttcatgga gatgtggaga 660
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<210> 66
<211> 248
<212> PRT
<213> Brassica oleracea

<220>
<223> BH566718 polypeptide

<400> 66

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1 5 10 15

Thr Thr Pro Pro Ser Ser Ser Gln Leu Lys Thr Pro Asp Leu His Ile
20 25 30

Ser Met Asn Met Ala Met Val Ser Gly His Asn Asn His His His His
35 40 45

His Gln Glu Val Asn Thr Asn Asn Asn Asn Glu Asp Asp Arg Asp Asn
50 55 60

Leu Ser Gly Asp Asp Arg Glu Pro Arg Glu Gly Ala Val Glu Ala Pro
65 70 75 80

Thr Arg Arg Pro Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys
85 90 95

Pro Pro Ile Phe Val Thr Arg Asp Ser Pro Asn Ala Leu Lys Ser His
100 105 110

Val Met Glu Ile Ala Ser Gly Thr Asp Val Ile Glu Thr Leu Ala Thr
115 120 125

Phe Ala Arg Arg Arg Gln Arg Gly Ile Cys Ile Leu Ser Gly Asn Gly
130 135 140

Thr Val Ala Asn Val Thr Leu Arg Gln Pro Ser Val Ala Pro Val Ala
145 150 155 160

Ala Ala Pro Gly Gly Ala Ala Val Leu Ala Leu Gln Gly Arg Phe Glu
165 170 175

Ile Leu Ser Leu Thr Gly Ser Phe Leu Pro Gly Pro Ala Pro Pro Gly
180 185 190

Ser Thr Gly Leu Thr Ile Tyr Leu Ala Gly Gly Gln Gly Gln Val Val
195 200 205

Gly Gly Ser Val Val Gly Ala Leu Met Ala Ala Gly Pro Val Met Leu
210 215 220

Ile Ala Ala Thr Phe Ser Asn Ala Thr Tyr Glu Arg Leu Pro Leu Asp
225 230 235 240

Glu Glu Glu Ala Ala Lys Glu Leu
245

<210> 67
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 <212> DNA
 <213> Brassica oleracea

<220>
 <223> BH685875

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 gcacctggcg gtgcgggtgg tggcaaacg gttcccgta gcgaaagaat ctcaaactt 180
 ccatgtaaag tcacaactcc tctcctccg gctccaccac cgctatttcc gggagtgact 240
 ggctgacgaa gagtgacgtt agaaacggtg ccgtttcctc ctaaaacgga gacccctctc 300
 cctctccgcc tagcgtaagt ggacacacac tcaactatgt cagctccagg agatacttca 360
 aggacgtgag atctaagcgc attggggcta tcgcgcgtga ctatgatcgg tggcttagct 420
 ttgttcttag atcccggtgg acgtccacgt ggacgtttcc caggtgctga gcttgatgta 480
 gccgggtctg aatcggttag acccggttga tgatgatcct tgtttgagtg atcagattct 540
 cttgaatcat ccgacgggtg gtgttggtgc tgctggtggt gttgctggtg atgatgctgg 600
 tcaaaaaaga tgatcccgcc 620

<210> 68
 <211> 206
 <212> PRT
 <213> Brassica oleracea

<220>
 <223> BH685875 polypeptide

<400> 68
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 Gln Gln Gln His His Pro Ser Asp Asp Ser Arg Glu Ser Asp His Ser
 20 25 30
 Asn Lys Asp His His Gln Pro Gly Leu Pro Asp Ser Asp Pro Ala Thr
 35 40 45
 Ser Ser Ser Ala Pro Gly Lys Arg Pro Arg Gly Arg Pro Pro Gly Ser
 50 55 60
 Lys Asn Lys Ala Lys Pro Pro Ile Ile Val Thr Arg Asp Ser Pro Asn
 65 70 75 80

Ala Leu Arg Ser His Val Leu Glu Val Ser Pro Gly Ala Asp Ile Val
85 90 95

Glu Cys Val Ser Thr Tyr Ala Arg Arg Arg Gly Arg Gly Val Ser Val
100 105 110

Leu Gly Gly Asn Gly Thr Val Ser Asn Val Thr Leu Arg Gln Pro Val
115 120 125

Thr Pro Gly Asn Ser Gly Gly Gly Ala Gly Gly Gly Gly Val Val Thr
130 135 140

Leu His Gly Arg Phe Glu Ile Leu Ser Leu Thr Gly Thr Val Leu Pro
145 150 155 160

Pro Pro Ala Pro Pro Gly Ala Gly Gly Leu Ser Ile Phe Leu Ser Gly
165 170 175

Gly Gln Gly Gln Val Val Gly Gly Ser Val Val Ala Pro Leu Val Ala
180 185 190

Ser Ala Pro Val Ile Leu Val Ala Ala Ser Phe Ser Asn Ala
195 200 205

<210> 69
<211> 929
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> CBF1 G40

<400> 69
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agacagatat actatctttt attaatccaa aaagactgag aactctagta actacgtact 120
acttaaacct tatccagttt cttgaaacag agtactctga tcaatgaact cattttcagc 180
tttttctgaa atgtttggct ccgattacga gcctcaaggc ggagattatt gtccgacgtt 240
ggccacgagt tgtccgaaga aaccggcggg ccgtaagaag tttcgtgaga ctgcgtcaccc 300
aatttacaga ggagttcgtc aaagaaactc cggtaagtgg gtttctgaag tgagagagcc 360
aaacaagaaa accaggattt ggctcgggac tttccaaacc gctgagatgg cagctcgtgc 420
tcacgacgtc gctgcattag ccctccgtgg ccgatcagca tgtctcaact tcgctgactc 480
ggcttggcgg ctacgaatcc cggagtcaac atgcgccaag gatatccaaa aagcggtgc 540
tgaagcggcg ttggcttttc aagatgagac gtgtgatacg acgaccacga atcatggcct 600

ggacatggag gagacgatgg tggaagctat ttatacaccg gaacagagcg aagggtgcgtt 660
 ttatatggat gaggagacaa tgtttgggat gccgactttg ttggataata tggctgaagg 720
 catgctttta ccgccgccgt ctgttcaatg gaatcataat tatgacggcg aaggagatgg 780
 tgacgtgtcg ctttggagtt actaatattc gatagtcgtt tccatttttg tactatagtt 840
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 gtagaaacga gtggaaaata attcaatac 929

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 <211> 213
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> CBF1 G40 polypeptide
 <400> 70

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 20 25 30

Lys Pro Ala Gly Arg Lys Lys Phe Arg Glu Thr Arg His Pro Ile Tyr
 35 40 45

Arg Gly Val Arg Gln Arg Asn Ser Gly Lys Trp Val Ser Glu Val Arg
 50 55 60

Glu Pro Asn Lys Lys Thr Arg Ile Trp Leu Gly Thr Phe Gln Thr Ala
 65 70 75 80

Glu Met Ala Ala Arg Ala His Asp Val Ala Ala Leu Ala Leu Arg Gly
 85 90 95

Arg Ser Ala Cys Leu Asn Phe Ala Asp Ser Ala Trp Arg Leu Arg Ile
 100 105 110

Pro Glu Ser Thr Cys Ala Lys Asp Ile Gln Lys Ala Ala Ala Glu Ala
 115 120 125

Ala Leu Ala Phe Gln Asp Glu Thr Cys Asp Thr Thr Thr Thr Asn His
 130 135 140

Gly Leu Asp Met Glu Glu Thr Met Val Glu Ala Ile Tyr Thr Pro Glu
 145 150 155 160

Gln Ser Glu Gly Ala Phe Tyr Met Asp Glu Glu Thr Met Phe Gly Met
165 170 175

Pro Thr Leu Leu Asp Asn Met Ala Glu Gly Met Leu Leu Pro Pro Pro
180 185 190

Ser Val Gln Trp Asn His Asn Tyr Asp Gly Glu Gly Asp Gly Asp Val
195 200 205

Ser Leu Trp Ser Tyr
210

<210> 71
<211> 803
<212> DNA
<213> Arabidopsis thaliana

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<223> CBF2 G41

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gggaaggaag aagtttcgtg agactcgtca cccaatttac agaggagttc gtcaaagaaa 180
ctccggtaag tgggtgtgtg agttgagaga gccaaacaag aaaacgagga tttggctcgg 240
gactttccaa accgctgaga tggcagctcg tgctcacgac gtcgccgcca tagctctccg 300
tggcagatct gcctgtctca atttcgctga ctcggttgg cggttacgaa tcccggaatc 360
aacctgtgcc aaggaaatcc aaaaggcggc ggctgaagcc gcgttgaatt ttcaagatga 420
gatgtgtcat atgacgacgg atgctcatgg tcttgacatg gaggagacct tgggtggaggc 480
tatttatacg ccggaacaga gccaagatgc gttttatatg gatgaagagg cgatgttggg 540
gatgtctagt ttgttgata acatggccga agggatgctt ttaccgtcgc cgtcggttca 600
atggaactat aattttgatg tcgagggaga tgatgacgtg tccttatgga gctattaaaa 660
ttcgattttt atttccattt ttggtattat agctttttat acatttgatc cttttttaga 720
atggatcttc ttcttttttt ggttgtgaga aacgaatgta aatggtaaaa gttgttgtca 780
aatgcaaatg tttttgagtg cag 803

<210> 72
<211> 207
<212> PRT
<213> Arabidopsis thaliana

<220>

<223> CBF2 G41 polypeptide

<400> 72

Met Phe Gly Ser Asp Tyr Glu Ser Pro Val Ser Ser Gly Gly Asp Tyr
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Ser Pro Lys Leu Ala Thr Ser Cys Pro Lys Lys Pro Ala Gly Arg Lys
20 25 30

Lys Phe Arg Glu Thr Arg His Pro Ile Tyr Arg Gly Val Arg Gln Arg
35 40 45

Asn Ser Gly Lys Trp Val Cys Glu Leu Arg Glu Pro Asn Lys Lys Thr
50 55 60

Arg Ile Trp Leu Gly Thr Phe Gln Thr Ala Glu Met Ala Ala Arg Ala
65 70 75 80

His Asp Val Ala Ala Ile Ala Leu Arg Gly Arg Ser Ala Cys Leu Asn
85 90 95

Phe Ala Asp Ser Ala Trp Arg Leu Arg Ile Pro Glu Ser Thr Cys Ala
100 105 110

Lys Glu Ile Gln Lys Ala Ala Ala Glu Ala Ala Leu Asn Phe Gln Asp
115 120 125

Glu Met Cys His Met Thr Thr Asp Ala His Gly Leu Asp Met Glu Glu
130 135 140

Thr Leu Val Glu Ala Ile Tyr Thr Pro Glu Gln Ser Gln Asp Ala Phe
145 150 155 160

Tyr Met Asp Glu Glu Ala Met Leu Gly Met Ser Ser Leu Leu Asp Asn
165 170 175

Met Ala Glu Gly Met Leu Leu Pro Ser Pro Ser Val Gln Trp Asn Tyr
180 185 190

Asn Phe Asp Val Glu Gly Asp Asp Asp Val Ser Leu Trp Ser Tyr
195 200 205

<210> 73

<211> 908

<212> DNA

<213> Arabidopsis thaliana

<220>
 <221> misc_feature
 <222> (851)..(851)
 <223> n is a, c, g, or t

<220>
 <223> CBF3 G42

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 gaactcattt tctgcttttt ctgaaatggt tggctccgat tacgagtctt cggtttcctc 180
 aggcggtgat tatattccga cgcttgcgag cagctgcccc aagaaaccgg cgggtcgtaa 240
 gaagtttcgt gagactcgtc acccaatata cagaggagtt cgtcggagaa actccggtaa 300
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 aaccgctgag atggcagctc gagctcacga cgttgccgct ttagcccttc gtggccgatc 420
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 tgcgacgacg gatcatggct tcgacatgga ggagacgttg gtggaggcta tttacacggc 600
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 tcatgaagtc gacggcgatg atgacgacgt atcggtatgg agttattaaa actcagatta 780
 ttatttccat ttttagtacg atacttttta ttttattatt atttttagat ctttttttag 840
 aatggaatct ncattatggt tgtaaaactg agaaacgagt gtaaattaaa ttgattcagt 900
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<210> 74
 <211> 216
 <212> PRT
 <213> Arabidopsis thaliana

<220>
 <223> CBF3 G42 polypeptide

<400> 74

Met Asn Ser Phe Ser Ala Phe Ser Glu Met Phe Gly Ser Asp Tyr Glu
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Ser Ser Val Ser Ser Gly Gly Asp Tyr Ile Pro Thr Leu Ala Ser Ser
 20 25 30

Cys Pro Lys Lys Pro Ala Gly Arg Lys Lys Phe Arg Glu Thr Arg His
 35 40 45

Pro Ile Tyr Arg Gly Val Arg Arg Arg Asn Ser Gly Lys Trp Val Cys
50 55 60

Glu Val Arg Glu Pro Asn Lys Lys Thr Arg Ile Trp Leu Gly Thr Phe
65 70 75 80

Gln Thr Ala Glu Met Ala Ala Arg Ala His Asp Val Ala Ala Leu Ala
85 90 95

Leu Arg Gly Arg Ser Ala Cys Leu Asn Phe Ala Asp Ser Ala Trp Arg
100 105 110

Leu Arg Ile Pro Glu Ser Thr Cys Ala Lys Asp Ile Gln Lys Ala Ala
115 120 125

Ala Glu Ala Ala Leu Ala Phe Gln Asp Glu Met Cys Asp Ala Thr Thr
130 135 140

Asp His Gly Phe Asp Met Glu Glu Thr Leu Val Glu Ala Ile Tyr Thr
145 150 155 160

Ala Glu Gln Ser Glu Asn Ala Phe Tyr Met His Asp Glu Ala Met Phe
165 170 175

Glu Met Pro Ser Leu Leu Ala Asn Met Ala Glu Gly Met Leu Leu Pro
180 185 190

Leu Pro Ser Val Gln Trp Asn His Asn His Glu Val Asp Gly Asp Asp
195 200 205

Asp Asp Val Ser Leu Trp Ser Tyr
210 215

<210> 75
<211> 632
<212> DNA
<213> Brassica napus

<220>
<223> bnCBF1

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gaaccaaaca agaaatctag aatttggtt ggaactttca aaacagctga gatggcagct 120
cgtgctcacg acgtcgctgc cctagccctc cgtggaagag gcgcctgcct caattatgcg 180
gactcggctt ggcggctccg catcccggag acaacctgcc acaaggatat ccagaaggct 240


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gaacatggca tgaacatgga ggaggcaacg gcagtggctt ctcaggctga ggtgaatgac 420
acgacgacgg atcatggcgt agacatggag gagacaatgg tggaggctgt ttttactggg 480
gaacaaagtg aagggtttaa catggcgaag gagtcgacgg tggaggctgc tgttgttacg 540
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ttggctgata tggcagaagg gatgctcctg cc 632

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<210> 76
 <211> 208
 <212> PRT
 <213> Brassica napus

<220>
 <223> bnCBF1 polypeptide

<400> 76

His Pro Ile Tyr Arg Gly Val Arg Leu Arg Lys Ser Gly Lys Trp Val
 1 5 10 15

Cys Glu Val Arg Glu Pro Asn Lys Lys Ser Arg Ile Trp Leu Gly Thr
 20 25 30

Phe Lys Thr Ala Glu Met Ala Ala Arg Ala His Asp Val Ala Ala Leu
 35 40 45

Ala Leu Arg Gly Arg Gly Ala Cys Leu Asn Tyr Ala Asp Ser Ala Trp
 50 55 60

Arg Leu Arg Ile Pro Glu Thr Thr Cys His Lys Asp Ile Gln Lys Ala
 65 70 75 80

Ala Ala Glu Ala Ala Leu Ala Phe Glu Ala Glu Lys Ser Asp Val Thr
 85 90 95

Met Gln Asn Gly Gln Asn Met Glu Glu Thr Thr Ala Val Ala Ser Gln
 100 105 110

Ala Glu Val Asn Asp Thr Thr Thr Glu His Gly Met Asn Met Glu Glu
 115 120 125

Ala Thr Ala Val Ala Ser Gln Ala Glu Val Asn Asp Thr Thr Thr Asp
 130 135 140

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His Gly Val Asp Met Glu Glu Thr Met Val Glu Ala Val Phe Thr Gly
145 150 155 160

Glu Gln Ser Glu Gly Phe Asn Met Ala Lys Glu Ser Thr Val Glu Ala
165 170 175

Ala Val Val Thr Glu Glu Pro Ser Lys Gly Ser Tyr Met Asp Glu Glu
180 185 190

Trp Met Leu Glu Met Pro Thr Leu Leu Ala Asp Met Ala Glu Gly Met
195 200 205

<210> 77
<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> Artificial Sequence

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (15)..(15)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (18)..(18)
<223> n is a, c, g, or t

<220>
<223> Mol 368 reverse primer

<400> 77
cayccnatht aymgnggngt

20

<210> 78
<211> 21
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<213> artificial sequence

<220>
<223> Artificial Sequence

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<223> n is a, c, g, or t

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